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East Meets West: Effects of Justice On Employees' Commitment within the Context of International Joint Ventures in China

YUI-TIM WONG

The main purpose of this study is to explore and compare the relationships of justice and commitment among Chinese employees working in International Joint Ventures (IJVs) and reformed State-owned Enterprises (SOEs) today. In this study, distributive justice and procedural justice are considered as antecedents of affective commitment, and interactional justice is considered as antecedent of commitment to supervisor. Additionally, the model further suggests that affective commitment will affect employees' turnover intention and organisational citizenship behaviour; and commitment to supervisor will affect employees' organisational citizenship behaviour. A data set consisting of 247 employees in two international joint ventures and 253 employees in two state-owned enterprises in Shanghai and Southern China are used to test the hypotheses empirically The LISREL results support the hypotheses. The study shows the major differences of employees' attitudes and behaviour in international joint ventures and state-owned enterprises in China today. The effect of distributive justice on employees' affective commitment is stronger in SOE than in IJV. On the contrary, the effect of procedural justice on employees' affective commitment is stronger in IJV than in SOE. Additionally, the effect of interactional justice on commitment to supervisor is similar in both types of organisation. These results reveal that interactional justice is highly emphasized in both IJVs and SOEs in contemporary China, though the employees are working in different organisational contexts Finally, theoretical and practical implications of the present study are discussed

Keywords: *Chinese Management, Commitment, International Joint Ventures, Relationship of Justice and Commitment, Organisational Citizenship Behaviour*

Introduction

The studies of organisational commitment (Lavelle et al., 2009; Martin, 2008; Shore et al., 2008) and justice (Liao and Rupp, 2005; Walumbwa et al., 2008) are important today. Recent studies show that different types of justices have significant impacts on commitment (DeConinck and Stilwell, 2004; Liao and Rupp, 2005; Walumbwa et al., 2008). However, the preponderance of past researches on commitment and justice has focused on Western samples. This is a limitation, because these studies only show the conditions in countries with greater future orientation (e.g. U.S.A. and U.K.), but not for countries in lower future orientation (e.g. China and Russia). Cultural future orientation is the degree to which a collectivity encourages and rewards future-oriented behaviours such as planning and delaying gratification (House et al., 1999). Hence, the generalizability of these findings to other parts of the world is in question, and more cross-cultural studies in this area of research are needed.

In view of its unique cultural traditions (Earley, 1989) and sweeping economic reform (Warner, 1993) during the past two decades, China provides an ideal research setting for studying commitment and justice in international joint ventures. Because human resources management in China is at the cross-roads, as it encounters 'a fast-changing environment' (Warner, 2009). The studies of commitment in China are important. For instance, the study of Yu and Egri (2005) reveals the importance of human resource management practices in creating effective organisational commitment in international joint venture (IJVs) and state-owned enterprise (SOEs) in China. According to this research report, World Trade Organisation (WTO) membership has increased China's necessity to be globally competitive (Goldsmith, 2006). Researchers have studied different types of commitment (Gong and Chang, 2008; Wong and Lui, 2007; Wong et al., 2006) and justice (Chen et al., 2002; Leung et al., 1996; Wong et al., 2002) separately in the context of China. However, there is a lack of research in studying the causal relationships

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between different types of justice and commitment in China. Due to the rapid changes in China, it is meaningful to have further study about the effect of employees perception of justice on their commitment in different Chinese enterprises today.

This research in the Chinese context with both IJV and SOE will fill this research gap and contribute to the existing literature. It includes both organisation with greater future orientation (e.g. IJVs) and the organisation with lower future orientation (e.g. SOEs). The main purpose of this study is to explore the relationships of justice and commitment among Chinese employees working in IJVs today, and the conditions of employees in reformed SOEs will be used for comparison. In this study, distributive justice and procedural justice are considered as antecedents of affective commitment, and interactional justice is considered as antecedent of commitment to supervisor. Additionally, the model further suggests that affective commitment will affect employees' turnover intention and organisational citizenship behaviour; and commitment to supervisor will affect employees' organisational citizenship behaviour. A data set consisting of 247 employees in two international joint ventures and 253 employees in two state-owned enterprises in Shanghai and Southern China are used to test the hypotheses empirically.

International Joint Ventures in China

International joint venture (IJV) has become a major form of foreign investment in China, since China adopted Deng Xiaoping's open-door economic policy. Deng insisted: "Reform is China's second revolution" (Deng, 1994). His thinking can be better understood from his wisdom: "It doesn't matter if a cat is black or white, so long as it catches mice" (Quotation from Deng Xiaoping). The management and governance structure of IJVs are remarkably different from those of SOEs. There are several characteristics of joint ventures in China. First of all, the creation of joint ventures is subject to government pressures and often includes government partners. They are also often formed with partners from ethnically related countries (Beamish, 1993) or Western countries. Second, most of them have adopted Western human resources practices (Warner, 1997). In particular, unlike state-owned enterprises, joint ventures adopt a performance-based reward system. Moreover, redundancies and dismissals are also practiced in joint ventures (Warner, 1997). Thus, the employment conditions of workers in joint ventures differ significantly from those in state-owned enterprises (Chow et al., 1999).

On the contrary, state-owned enterprises (SOEs) are typically large organisations, concentrated in the sectors that are given priority under the central planning system. Under Mao Zedong's leadership, establishment of SOEs were strongly encouraged in whole China. According to Mao, "Diligence and frugality should be practised in government policies. The employment situation in SOEs is subjected to tight running factories and shops and all state-owned, co-operative and other enterprises" (Mao, 1955). The operation and management of SOEs are strongly influenced by government control and many institutional constraints on human resource management (Chow et al., 1999). Studies show that stricter management control, extended working hours, increased workload, raised production quotas and punitive discipline are common in the reformed SOEs (Chiu, 2006; Zhao and Nichols, 1996). In general, managers of SOEs are conservative and share a common concern for stability and security. They tend to avoid proactive and risk-taking decisions when faced with uncertain environments (Adler et al., 1992).

Based on the study of Ashkanasy et al., (2004), it is logical to expect that there are differences between IJV and SOE. For instance, IJVs with Hong Kong partner or Western partner in China should be classified as "Band B" with greater future orientation. They tend to achieve economic success, have individuals who are more intrinsically motivated, and have flexible and adaptive organisation and managers. On the contrary, SOEs in China should be classified as "Band C" with lower future orientation. They tend to have lower levels of economic success, have individuals who are less intrinsically motivated, and have inflexible and maladaptive organisation and managers. Yau (2004) observes that the differences in management approaches in the East and the West have impact on IJVs in China. Due to the different HRM practices and culture in different contexts, it is reasonable to expect that the effects of justice on commitment are different in IJVs and SOEs.

Affective Commitment and Commitment to Supervisor

The most prevalent approach to organisational commitment is the affective attachment approach, in which commitment is considered as an affective or emotional attachment to the organisation (Meyer and Allen, 1991). Mowday et al., (1982) define affective organisational commitment as "the relative strength of an individual's identification with and involvement in a particular organisation". Their definition will be used in the present study. Antecedents of affective commitment include organisational characteristics, personal characteristics and work experiences (Mowday et al., 1982). In addition, organisational culture and climates have been found to have impact on affective commitment (Shafer and Wang, 2010). Studies also show that justice is positively correlated with organisational commitment (Liao and Rupp, 2005; Walumbwa et al., 2008). Affective commitment has been found to be associated with in-role job performance and extra-role behaviour (Meyer and Allen, 1991; Pearce, 1993), and turnover intention or actual turnover (Konovsky and Cropanzano, 1991; Meyer et al., 1993).

Becker et al., (1996) have developed four scales (i.e., supervisor-related identification, supervisor-related internalization, organisational identification, and organisational internalization) for calculating overall commitment to supervisor. They found that commitment to supervisor is positively correlated with in-role performance (Becker et al., 1996) and extra-role behaviour (Gregersen, 1993). Commitment to supervisor is particularly important in Chinese context because traditional Chinese thinking expects a high level of commitment from the employees at work (Warner and Zhu, 2002). Chen et al., (1998) has developed and validated a five-dimension scale of loyalty to supervisor for measuring commitment to supervisor in China. Among the five dimensions, two are Western dimensions as developed by Becker et al., (1996), namely, identification and internalization, and three Chinese indigenous dimensions: dedication (i.e., dedicating oneself to a supervisor), effort (i.e., exerting effort on behalf of a supervisor), and following supervisor (i.e., a subordinate's desire to be attached to the supervisor). Chen et al., (1998) also report that commitment to supervisor is more powerful than organisational commitment in predicting both in-role and extra-role performance of Chinese employees.

Justice and Chinese Culture

Three major forms of organisational justice will be discussed in this study: distributive justice, procedural justice and interactional justice. Distributive justice refers to the perceived fairness of the amounts of compensation employees receive, whereas procedural justice refers to the perceived fairness of the means used to determine those amounts (Folger, 1977). Distributive justice deals with the content of fairness, whereas procedural justice is related to the process of fairness (Tang and Sarsfield-Baldwin, 1996). Procedural justice is multidimensional, and is affected by two major factors: formal procedures and interactional justice. Hence, it can be further classified as procedural justice/formal procedures and interactional justice (Greenberg, 1990; Tyler and Bies, 1990). More specifically, procedural justice (i.e., formal procedures) is related to the procedure used in allocating resources (Thibaut and Walker, 1975); while interactional justice is related to quality of treatment received from decision-makers (Bies and Moag, 1986; Tyler and Bies, 1990).

In the Chinese society, justice is important in the daily life. Hwang (2000) stated that: Confucius advocated that procedural justice in social connection should follow the "principles of respecting the superior… In choosing an appropriate method for distributive justice, the resource allocator should follow the principle of favouring the intimate" So we can see that such ethical guidelines for justice have been dwelt on in the ancient Chinese *wu-lun* principles (i.e., emperor-subject, father-son, husband-wife, elder-younger, and friend–friend). Such concepts should have important implications for Chinese employees' perceptions and behaviour. As Hui and Graen (1997) report that Confucianism supported feudal/family-based relationship have impacts in building successful organisational cultures in contemporary Mainland China, it is reasonable to expect that these several types of justice among Chinese employees will affect both their affective commitment and commitment in supervisor in the workplace.

Antecedents of Commitment

Social exchange theory has been used to explain the link between employee perceptions of the workplace and their subsequent work attitudes and behaviour (Settoon et al., 1996; Wayne et al., 1997). Following the work of Blau (1964), social exchange theory assumes that individuals' social interactions are driven by rational self-interest (Witt et al., 2001). Individuals will enter and remain in exchange relationships as long as the costs in such relationships do not outweigh their benefits (Tyler and Lind, 1992). In a social exchange, one party provides a benefit to another party, thus invoking an obligation in the other party to reciprocate by providing a benefit in return. The norm of reciprocity and mutual commitment is developed during the process of social exchange.

According to social exchange theory, organisations are forums for exchange and transactions (Cropanzano et al., 1997; Randall et al., 1999). There are at least two important exchange partners in an employee's workplace: the employing organisation and the employee's immediate supervisor. The ways that employees interact with these two partners have an important bearing on their work-related attitudes and behaviour. For example, when the organisation provides a sufficient level of justice to its workers, the workers are likely to display positive job attitudes, such as a high level of organisational commitment. Likewise, when a supervisor provides justice to his or her subordinates at work, the subordinates are more likely to have commitment in supervisor. Based on social exchange theory, a number of hypotheses are developed below.

Consistent research findings show that distributive justice has greater impact on pay satisfaction than procedural justice, whereas procedural justice affects an employee's organisational commitment. Recent studies also indicate that procedural justice directly affects employee's organisational commitment (Liao and Rupp, 2005; Walumbwa et al., 2008). However, DeConinck and Stilwell (2004) report that both distributive justice and procedural justice are only indirect predictors of organisational commitment.

In China, Chinese employees' perceived distributive justice has been changed in the SOEs after the economic reforms. It is mainly due to the revision of the socialist principle "to each according to his work" by Deng Xiaoping in 1978. Deng said, "If, in handling distribution, we judged mainly on the basis of a person's politics rather than on the basis of his work, that would mean we were following the principle "to each according to his politics" rather than "to each according to his work". In short, distribution should be made only according to a person's work, not according to his politics or his seniority (Deng, 1984). To a certain extent, such kind of distributive justice for handling distribution is still emphasized in SOEs instead of IJVs. Hence, it is reasonable to expect that the effect of distributive justice will be stronger in SOEs than in IJVs. On the other hand, Chinese joint ventures have already moved to a new performance-based reward system after the reforms (Warner, 1997). They have fairer procedures for the allocation of material rewards. It is logical to expect that IJV employees have relatively high levels of perceptions in procedural justice, and this will in turn positively affect their affective commitment in organisation. Based on the literature, it is logical to expect that employees' procedural justice in IJVs will have a stronger impact on their affective commitment than SOEs. Thus, it is hypothesized that:

Hypothesis 1: Employees' distributive justice in SOEs will have a stronger effect on their affective commitment than in IJVs.

Hypothesis 2: Employees' procedural justice in IJVs will have a stronger effect on their affective commitment than in SOEs.

According to referent cognitions theory (Folger, 1986), individuals evaluate their work experiences by reflecting on "what might have been" under different circumstances and conditions. It is reasonable to believe that if a supervisor treats his subordinates well, there will be an increased desire on the part of subordinate to want to continue working in the same supervisor-subordinate relationship. Therefore, an individual's perception of the interactional justice is expected to have a positive effect on employees' commitment with the supervisor in the long run. Liao and Rupp (2005) report that employees' interactional justice has direct impact on commitment of supervisor. Given such a relationship, it is logical to expect that subordinates' perceived interactional justice with their supervisor directly affect their commitment to supervisor in both Chinese IJVs and SOEs. Hence, it is hypothesized that:

Hypothesis 3: Employees' interactional justice will have a significant and positive effect on their commitment to supervisor in both IJVs and SOEs.

According to the study of Hui et al., (2004), Chinese employees are expected to relate to an organisation through the particular relationships that exist between individuals and their supervisor. It is common for subordinates to view their supervisors as belonging to the "management level" and being the "representatives" of the organisation, particularly in high power-distance societies like China. Wong and Kung (1999) also argue that employees' commitment towards specific persons is important in the Chinese context. They have conducted an exploratory investigation on commitment with regard to specific foci with a sample of Chinese employees in Taiwan. The results indicate that commitment to immediate supervisor has a positive correlation with organisational commitment. Accordingly, Chinese workers' commitment to supervisor is likely to be linked to their affective commitment to both IJVs and SOEs. Thus, it is hypothesized that:

Hypothesis 4: Employees' perceptions of commitment to supervisor will have a significant and positive effect on their affective commitment in both IJVs and SOEs.

Consequences of Commitment

Turnover intention is defined as "a conscious and deliberate willfulness to leave the organisation" (Tett and Meyer, 1993). It is often measured with reference to a specific interval, and has been regarded as the last in a sequence of withdrawal cognitions, consisting of a set of thinking of quitting and an intent to search for alternative employment (Tett and Meyer, 1993). Past research findings show that turnover intention is negatively, significantly, and consistently related to affective commitment (Addae et al., 2008; Konovsky and Cropanzano, 1991).

Since the economic reform in China, many job opportunities have been available to Chinese workers in both IJVs and SOEs, including those jobs provided by joint ventures, foreign-invested enterprises and private businesses. With greater job mobility, employees can move to work in labour market freely today. Employees' turnover intention is also influenced by a great number of factors, such as their own skills, alternative work opportunities and their own perception of affective commitment to employing organisation. For instance, if the employees' skills are high, they will have more job opportunities in the labour market. They will have higher intention to leave the existing organisation. In addition, if the employees have low level of affective commitment to the employing organisation, they also have higher turnover intention. Studies show that there is a strong and negative relationship between employees' organisational commitment and their turnover intention in Chinese enterprises (Chen and Francesco, 2000; Wong et al., 2002). Hence, it is hypothesized that:

Hypothesis 5: Employees' affective commitment will have a significant and negative effect on their turnover intention in both IJVs and SOEs.

Organisational citizenship behaviour can be defined as work-related behaviour that "goes above and beyond" that dictated by organisational policy and one's job description. According to Meyer and Allen (1997), organisational citizenship behaviour measures typically include such things as "providing extra help to coworkers, volunteering for special work activities, being particularly considerate of coworkers and customers, being on time, and making suggestions when problems arise". Lavelle et al., (2009) find that there is a positive relationship between commitment to organisation and organisational citizenship behaviour. Gregersen's (1993) study indicates that commitment to supervisor is more strongly correlated with extra-role behaviour than is organisational commitment. Chen et al.'s study (1998) also indicates that commitment to supervisor is more powerful than organisational commitment in predicting extra-role performance of employees in Chinese IJVs.

Given the more future-oriented culture of IJVs (Ashkanasy et al., 2004), supervisors in IJVs are likely to have a greater future-time perspective, and thus are willing to devote more time and effort to establish long-term relationships and maintain frequent interactions with their subordinates. In addition, the relative absence of institutional constraints and administrative controls in IJVs means that supervisors will have more autonomy to develop close social network and informal organisation in the workplace. With close cooperation and frequent social interaction between supervisor and subordinates, greater commitment to supervisor among employees in IJVs will bring about a higher level of organisational citizenship behaviour.

The situation is different in SOEs. Working in the less future-oriented organisations (Ashkanasy et al., 2004), SOE supervisors may devote less time to build up long-term relationships with their subordinates. Due to the institutional constraints and administrative controls in SOEs, supervisors in SOEs will have no autonomy or incentive to develop close social network and informal organisation in the workplace. In addition, their supervisory style tends to be rigid and autocratic under the centralized management system. Without a solid base for establishing reciprocal social exchange relationships between supervisor and subordinates, employees' level of commitment to supervisor may not be greatly related to their organisational citizenship behaviour in SOEs. According to the theory of organized dependence (Walder, 1986), workers in the SOEs have a high dependence on their work units (*danwei*) for work assignments and means of livelihood, ranging from housing to children's education, recreational activities and health care in the pre-reform era. It is reasonable to expect that SOE employees have a strong affective commitment to the organisation, and their commitment will in turn affect their organisational citizenship behaviour. Hence, it is hypothesized that:

Hypothesis 6: In SOEs, employees' affective commitment will have a stronger effect on their organisational citizenship behaviour than in IJVs.

Hypothesis 7: In IJVs, employees' commitment to supervisor will have a stronger effect on their organisational citizenship behaviour than in SOEs.

To recap, a model is developed. It considers distributive justice and procedural justice as antecedents of affective commitment, and interactional justice as antecedent of commitment in supervisor. These two types of commitment, in turn, will affect the turnover intention and organisational citizenship behaviour of Chinese employees. However, some of these relationships are expected to be different in IJVs and SOEs due to the differences in management practices and employment relationships in the context of these two types of organisation. The hypothesized relationships among the constructs in IJVs and SOEs are schematically depicted in Table 1.

Table 1: The Hypothetical Relationships in IJV and SOE.

	Relationship		Expected patterns in IJV and SOE
1.	Distributive justice → Affective commitment	H1	Stronger in SOE than in IJV
2.	Procedural justice → Affective commitment	H2	Stronger in IJV than in SOE
3.	Interactional justice → Commitment to supervisor	H3	Similar in IJV and SOE
4.	Commitment to supervisor → Affective commitment	H4	Similar in IJV and SOE
5.	Affective commitment → Turnover intention	H5	Similar in IJV and SOE
6.	Affective commitment → OCB	H6	Stronger in SOE than in IJV
7.	Commitment to supervisor → OCB	H7	Stronger in IJV than in SOE

Notes: OCB = Organisational citizenship behaviour; IJV = International joint venture; SOE = State-owned enterprise.

Research Method

Samples and Procedure

To test the hypotheses, one IJV and one SOE in the manufacturing sector in Guangzhou, one IJV and one SOE in the manufacturing sector in Shanghai in the People's Republic of China have been selected. These factories have similar size and base in Guangzhou and Shanghai, which are the major cities in the Guangdong Province and Jiangsu Province respectively. To make the two samples more comparable, only factory workers, including production-line workers, technicians, foremen, and production supervisors are selected. The IJV sample for this study was composed of 247 employees and their 83 immediate supervisors. The SOE sample for this study was composed of 253 employees and their 86 immediate supervisors. The positions of respondents' immediate supervisors were production managers, production officers and supervisor. The four organisations were selected carefully so that they were representatives of IJVs and SOEs in the well-developed regions of Southern China and Eastern China.

Data collection involved a number of personal trips by the researcher to each data collection site. During the first two trips, production managers, production officers, supervisors and technical workers in the factories in the two samples are interviewed in order to gain a better understanding of the factories under study. During the following trips, the researcher was there together with the assistance of one local staff in each factory to collect the research data. Responses regarding distributive justice, procedural justice and interactional justice, affective commitment, commitment to supervisor and turnover intention were obtained from participants. The immediate supervisors of the participants were asked to evaluate their subordinates' level of organisational citizenship behaviour in order to avoid the "common method bias".

Some techniques are employed for controlling common method biases, such as protecting respondent anonymity and reducing their evaluation apprehension (Podsakoff et al., 2003). Firstly, the respondents' answers are allowed to be anonymous. Due to the response anonymity, some method of linking the data together had been used. Based on the name-lists of all staff and workers in the factories, the respondents and their immediate supervisors were identified in advance by systematic sampling. Questionnaires were distributed personally to each respondent. To assure all respondents that their individual responses would not be revealed to members of their working unit, the questionnaires for subordinates were collected immediately after completion. Researcher and assistants then approached their immediate supervisors for the organisational citizenship behaviour part of the assessment of their subordinates. Both the subordinates and the supervisors were assured that their questionnaires would be kept confidential. In addition, the respondents were assured that there were no right or wrong answers and they should answer questions as honestly as possible. These procedures can help the respondents reduce their evaluation apprehension and make them less likely to edit their responses to be more socially desirable, lenient, acquiescent, and consistent with how they think the researcher wants them to respond.

The survey questionnaire was written in Chinese. Some of measures in the questionnaire were drawn from measures developed in the West, and then translated in Chinese. To ensure the equivalence of the measures in the Chinese and English versions, back-translation from Chinese into English (Brislin, 1970) was performed. The two translations revealed no substantial differences in the meanings of the items. Two local research assistants with university degrees in English reviewed all of the Chinese translated items to ensure that all the items would be meaningful to Chinese participants. Finally, two Chinese scholars in Hong Kong examined the Chinese version of the questionnaire. All items were modified to fit into the 5-point Likert-scale format (i.e., 1 = "extremely disagree", 2 = "slightly disagree", 3 = "neither agree nor disagree", 4 = "slightly agree", and 5 = "extremely agree").

Measures

Affective Commitment

Eight items from Affective Commitment Scale (Allen and Meyer, 1990) were used to measure the employees' affective commitment in this study. This measure employs a five-point scale in Likert format; the higher scores indicate stronger commitment. Coefficient alpha of the sample for IJV is 0.76, and coefficient alpha of the sample for SOE is 0.76.

Commitment in Supervisor

Seventeen items from the Loyalty/Commitment to Supervisor Scale (LS) (Chen et al., 1998) were used to measure the employees' commitment to supervisor in this study. The LS scale is divided into two sub-variables: LSw and LSc. The LSw has two Western dimensions as developed by Becker et al., (1996), namely, identification (3 items) and internalization (3 items) The LSc has three Chinese indigenous dimensions, namely, dedication (i.e., dedicating oneself to a supervisor, 4 items), effort (i.e., exerting effort on behalf of a supervisor, 3 items), and following supervisor (i.e., a subordinate's desire to be attached to the supervisor, 4 items). An example of item is: "My supervisor's successes are my successes". Coefficient alpha of the sample for IJV is 0.82, and coefficient alpha of the sample for SOE is 0.90.

Distributive Justice

Five items from the Distributive Justice Index (Price and Mueller 1986) were modified and adopted. An example of item is: "Fairly rewarded considering the responsibilities". Coefficient alpha of the sample for IJV is 0.94, and coefficient alpha of the sample for SOE is 0.87.

Procedural Justice

The four items used by Balkin and Gomez-Mejia (1990) were modified and adopted. An example of item is: "Managers at all levels participate in pay and performance appraisal decisions" Coefficient alpha of the sample for IJV is 0.76, and coefficient alpha of the sample for SOE is 0.86.

Interactional Justice

Six items used by Moorman (1991) were modified and adopted. An example of item is: "Your supervisor treated you with kindness and consideration". Coefficient alpha of the sample for IJV is 0.84, and coefficient alpha of the sample for SOE is 0.86.

Turnover Intention

The three-item measure of intention to change jobs from Camman et al., (1979) were modified and adopted in this study. The three items are: "I often think about quitting", "I will probably look for a new job in the next year", and "If I may choose again, I will choose to work for the current organisation". Coefficient alpha of the sample for IJV is 0.72, and coefficient alpha of the sample for SOE is 0.75.

Organisational Citizenship Behaviour

Twenty-two items used by Farh et al., (1997) were modified and adopted. An example of item is: "Willing to stand up to protect the reputation of the company". Coefficient alpha of the sample for IJV is 0.80, and coefficient alpha of the sample for SOE is 0.92

Analytical Strategy

LISREL 8.52 (Jöreskog and Sörbom, 2002) is employed to test the proposed model. Due to the limited sample size in this study, the single indicator method used in past researches (Anderson and Williams, 1992; Wong and Kung, 1999) is adopted. By this method, the parameters of the measurement models are estimated from the variances and reliability coefficients of the measures. To set the measurement parameters for the single indicator model, the factor loadings are set equal to the square root of the reliability; whereas the error variances are set equal to the variance of the measure multiplied by the reliability coefficient subtracted by one. Since most of the measures are well-established scale with acceptable reliability, fixing the measurement by this method is reasonable. In addition, data collected are used to test the hypotheses of the proposed model, because coefficient alphas of the samples for all measures are similar to past researches.

The hypotheses are tested by comparing the path coefficient between different constructs in IJV sample and SOE sample. Hypothesis 1 is tested by path coefficient between distributive justice and affective commitment; Hypothesis 2 is tested by path coefficient between procedural justice and affective commitment; and Hypothesis 3 is tested by path coefficient between interactional justice and commitment to supervisor. Hypothesis 4 is tested by path coefficient between commitment to supervisor and affective commitment in the hypothesized model. In addition, Hypothesis 5 is tested by path coefficient between affective commitment and employees' turnover intention. Hypothesis 6 is tested by path coefficient between affective commitment and organisational citizenship behaviour, and Hypothesis 7 is tested by path coefficient between commitment to supervisor and organisational citizenship behaviour.

Results

Descriptive statistics and correlation coefficients of the study variables are shown in Table 2 and Table 3 for both the IJV sample and the SOE sample respectively. For the IJV sample, the correlation matrix in Table 2 indicates that both affective commitment and commitment to supervisor are strongly correlated with their antecedents. As expected, distributive justice is positively correlated with affective commitment ($r = 0.19, p < 0.01$), and interactional justice is positively related to commitment to supervisor ($r = 0.51, p < 0.01$). Similarly, distributive justice is positively related to affective commitment ($r = 0.31, p < 0.01$), and interactional justice is positively related to commitment to supervisor ($r = 0.55, p < 0.01$) for the SOE sample in Table 3.

Table 2: Means, Standard Deviations and Correlations for Variables for IJV in China

Variable	Mean	SD	1	2	3	4	5	6	7
Affective commitment	3.45	0.50	-						
Commitment to supervisor	3.31	0.45	0.44**	-					
Distributive justice	3.40	0.98	0.19**	0.26**	-				
Procedural justice	3.16	0.79	0.28**	0.18**	0.49**	-			
Interactional justice	3.57	0.66	0.13*	0.51**	0.45**	0.28**	-		
Turnover intention	2.65	0.61	-0.28**	-0.36**	-0.22**	-0.03	-0.20**	-	
OCB	3.76	0.37	0.25**	0.57**	0.25**	0.22**	0.30**	-0.17**	-

$N = 247$; $^{*}p<0.05$, $^{**}p<0.01$ (2-tailed).

Table 3: Means, Standard Deviations and Correlations for Variables for SOE in China

Variable	Mean	SD	1	2	3	4	5	6	7
Affective commitment	3.76	0.50	-						
Commitment to supervisor	3.60	0.50	0.59**	-					
Distributive justice	3.38	0.77	0.31**	0.48**	-				
Procedural justice	3.24	0.90	0.14*	0.29**	0.54**	-			
International justice	3.70	0.63	0.34**	0.55**	0.53**	0.44**	-		
Turnover intention	2.23	0.70	-0.40**	-0.24**	-0.22**	-0.02	-0.19**	-	
OCB	3.97	0.57	0.19**	0.16*	0.18**	0.17**	0.20**	-0.05	-

$N = 253$; $^{*}p<0.05$, $^{**}p<0.01$ (2-tailed).

The goodness–of-fit statistics show that all the fit indexes are satisfactory for both samples. For the IJV sample: χ^2 (11) = 48.51 (p = 0.0000012), standardized RMR = 0.065, GFI = 0.95, CFI = 0.91, IFI = 0.91; and for the SOE sample: χ^2 (11) = 27.71 (p = 0.0036), standardized RMR = 0.050, GFI = 0.97, CFI = 0.96, IFI = 0.96. With these results, the hypotheses with the structural model were tested. Figure 1 summarizes the results of LISREL analysis for the IJV and SOE samples respectively. All path coefficients (in standardized estimates) are reported. The specific findings are discussed below.

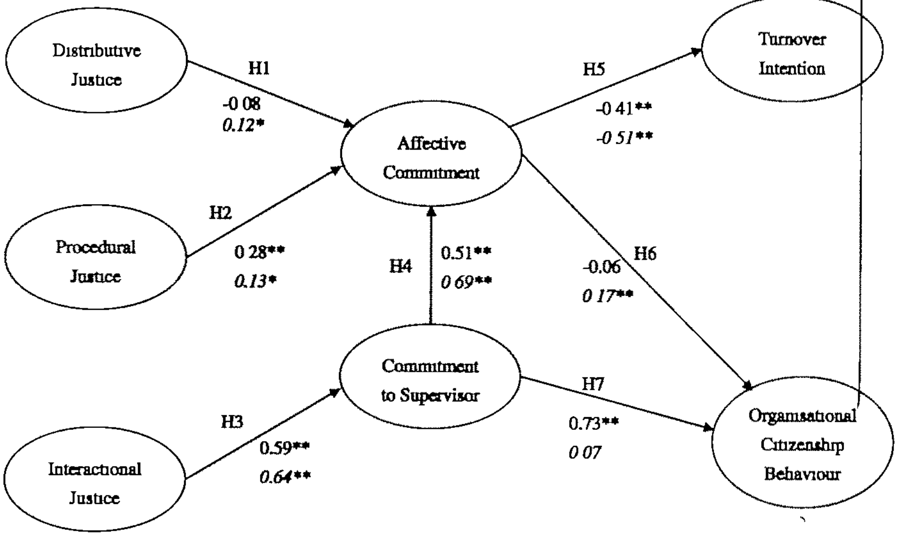
Distributive Justice
Procedural Justice
Interactional Justice
Affective Commitment
Commitment to Supervisor
Turnover Intention
Organisational Citizenship Behaviour
H1
-0.08
*0.12**
H2
0.28**
*0.13**
H3
0.59**
*0.64***
H4
0.51**
*0.69***
H5
-0.41**
*-0.51***
H6
-0.06
*0.17***
H7
0.73**
0.07

Figure 1: Hypotheses and Path Coefficients for IJV Sample and SOE Sample (in italics). *p<0.05 **p<0.01.

First of all, the effect of distributive justice on affective commitment is examined. Its effect is stronger in SOE ($\beta = 0.12$, $p < 0.05$) than in IJV ($\beta = -0.08$, n. s.). Thus, Hypothesis 1 is supported. Then, the effect of procedural justice on affective commitment is examined. Its effect is stronger in IJV ($\beta = 0.38$, $p < 0.01$) than in SOE ($\beta = 0.13$, $p < 0.05$). Thus, Hypothesis 2 is also supported. Turning to the effect of interactional justice, it is found that its impact on commitment to supervisor is similar in both IJV ($\beta = 0.59$, $p < 0.01$) and SOE ($\beta = 0.64$, $p < 0.01$). This means that Hypothesis 3 is supported. As expected, commitment to supervisor has a significant and positive effect on affective commitment in both IJV ($\beta = 0.51$, $p < 0.01$) and SOE ($\beta = 0.69$, $p < 0.01$). In view of these, Hypothesis 4 is supported.

Moreover, affective commitment is significantly and negatively related to turnover intention in both IJV ($\beta = -0.41$, $p < 0.01$) and SOE ($\beta = -0.51$, $p < 0.01$). Hypothesis 5 thus gains empirical support. Hypothesis 6 states that employees' affective commitment will have a stronger effect on their organisational citizenship behaviour in SOE than in IJV. The results show that affective commitment is positively related to organisational citizenship behaviour for the SOE sample ($\beta = 0.17$, $p < 0.01$), but its impact on organisational citizenship behaviour in the IJV sample is insignificant ($\beta = -0.06$, n. s.). These findings confirm Hypothesis 6. Hypothesis 7 states that the employees' commitment in supervisor will be positively related to their organisational citizenship behaviour, and such relationship will be stronger in IJV than in SOE. As shown in Figure 1, commitment to supervisor has a strong and positive effect on organisational citizenship behaviour for the IJV sample ($\beta = 0.73$, $p < 0.01$). But its effect on organisational citizenship behaviour is insignificant for the SOE sample ($\beta = 0.07$, n. s.). Thus, Hypothesis 7 is supported.

Discussion and Conclusion

Main Findings

The main purpose of this study is to explore and compare the relationships of affective commitment, commitment to supervisor and justice among Chinese employees working in IJV and SOE. It has several implications for future research. First, it enhances our understanding of the roles of justice in the Chinese workplace. To the best of the author's knowledge, it is the first study that examines the relationships among employees' affective commitment, commitment in supervisor and justice in both IJV and SOE, and thus fills a research niche. The results show that the effect of distributive justice on employees' affective commitment is stronger in SOE than in IJV. On the contrary, the effect of procedural justice on employees' affective commitment is stronger in IJV than in SOE. Additionally, the effect of interactional justice on commitment to supervisor is similar in both types of organisation. These results reveal that interactional justice is highly emphasized in both IJVs and SOEs in contemporary China, though the employees are working in different organisational contexts.

Moreover, employees' organisational citizenship behaviour has been affected mainly by their affective commitment in SOE, but it is greatly affected by their commitment to supervisor in IJV. This study not only shows the different effects of commitment on organisational citizenship behaviour in IJV and SOE with different contexts, but also clarifies the mixed findings of the effects of affective commitment and commitment to supervisor on organisational citizenship behaviour in the previous researches. The results have the implications for managing employees in both organisations with lower future orientation (e.g., SOEs in China or Russia) and organisations with greater future orientation (e.g., IJVs in China with Western partner, or business organisations in U.S A. or U. K.). Given these findings, more studies should explore the role of affective commitment and commitment to supervisor on employees' attitudes and behaviour in different organisational settings and in different countries. Cross-cultural research on this topic is also called for.

Limitations and Future Research

There are several limitations of this study that may restrict its generalizability. First, most of the scales (e.g., Affective Commitment and Procedural Justice) used in this research are developed in the West, and they may not be able to capture their full meanings in China. Although their coefficient alphas are acceptable, the measures should be further refined and validated, particularly using larger samples in other organisational settings. Second, this study uses cross-sectional data. A longitudinal design should be employed in future work to clarify the direction of causality among variables. Third, organizational citizenship behaviour is the outcome variable for extra-role performance in this study. Future studies should investigate employee in-role performance. In addition, this study has compared across only four organisations in this study for the IJV-SOE comparison. The IJV-SOE differences may be due to other alternative explanations, such as idiosyncrasies of management in the firms. Hence, more future studies should be conducted in other IJVs and SOEs in other provinces of China.

Practical Implications

Knowing how distributive justice and procedural justice affect affective commitment and how interactional justice affects commitment to supervisor, management can take appropriate actions to improve employee commitment in the workplace. Given that the effects of affective commitment on organisational citizenship behaviour are different in IJVs and SOEs, different policies should be adopted to enhance employees' organisational citizenship behaviour in these two types of organisation. For instance, more attention should be paid to the development of affective commitment in Chinese SOEs and organisations with lower future orientation in other countries, such as Thailand, Russia and SOEs in India; but commitment to supervisor should be emphasized in Chinese IJVs and organisations with higher future orientation in other countries, such as U.S.A., U.K and IJVs in India. These findings have implications not only to the Chinese environment, but also have applicability to the Indian environment with both IJVs and SOEs (Mahalingam, 2008).

It is important to develop both commitment to supervisor and affective commitment in Chinese society. As Chinese people emphasize justice, foreign companies should take a long-term perspective in managing human resources when they invest in China, such as providing more fringe benefits and fair policies to their employees beyond what is stipulated in laws and regulations. This will make it easier for them to manage Chinese employees, especially when China has become a member of the World Trade Organisation. China will gradually integrate into the global economy by adapting itself to meet the international standards of doing business, and thus there will be no more cheap labour and harsh regulations. Under such circumstances, building a good and warm atmosphere between supervisors and subordinates will be beneficial to both organisations and their employees. To conclude with, this study suggests that Chinese firms should cultivate their employees' affective commitment and commitment to supervisor. Based on the research findings, taking a long-term perspective on human resources, providing fairness and interactional justice at work are recommended for IJVs that are operating in China today

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Political Economy Indicators of Business Competitiveness Environment: Analysing Bangladesh's Performance in 2009-10

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The world has undergone significant changes since 2008. This paper, by blending in a mix of primary and secondary sources of information, seeks to investigate and report on a number of political economy (institutional and market) factors affecting Bangladesh's business environment. The evaluation of these constraints is also relevant from other least developed countries' perspectives. The paper concludes that if Bangladesh (and other South Asian countries) are to remain competitive, both in their respective and foreign markets, they ought to get on with the task of addressing the factors undermining their business environment through building and improving developmental capacities, and thereby, facilitating realisation of the country's full industrial potential.

Introduction

The world has undergone significant changes since 2008. The sub-prime mortgage crisis, which was followed by central banks intervention in the form of providing liquidity to the banking system, has made financial markets fragile and caused much macroeconomic instability not only in the US, but also in many countries in Europe, such as Spain and Greece. It is to be underlined here that even a small, least developed country (LDC) like Bangladesh, with a 0.14 per cent share in world exports, has not been spared from the brunt of the global recession. The country's exports dipped by 6.20 per cent in the second half of 2009 compared to the corresponding period of the previous year whilst aid and investment flows are estimated to have declined by more than 50.00 per cent under the same period. According to UNCTAD LDCs Report 2008, LDCs as a group witnessed average GDP growth rates of 7.70 per cent in 2005-06 which was the highest in the last 30 years. This extraordinary growth was directly attributed to the liberalised trade regimes of these countries and many developed countries' open market policies (most notably the US, Canada and the EU). More fundamentally, some LDCs have experienced strong economic transformation from being dependent on foreign aid to completely relying on trade in order to support their economic growth. Bangladesh is one such example whose aid dependency (in terms of GDP) declined from 12.00 per cent in the 1990s to approximately 2.00 percent in 2007 (Khatun, 2008).

If the recently achieved high economic growth rates are to be sustained and carried forward, there will be an acute need to better understand the interplay of forces affecting the business competitiveness environment, particularly in view of the recent events in the global arena. Business competitiveness can be defined as the *ability* of a firm to produce goods and to provide services which is directly linked with improvement of productivity. Business competitiveness can be achieved through enhancement of investment, production and trade and today, it is considered to be one of the most critical issues in the policy discourse on economic development of any nation state. Better business environment of a country is associated with progress in macroeconomic management, corruption and performance of public institutions, state of infrastructure, the degree of business sophistication in terms of operations, and other factors responsible for promoting efficiency in industrial activities. All the aforesaid factors reinforce each other and thereby influence the business environment of a country.

Objectives

The paper attempts to analyse Bangladesh's position vis-à-vis other countries over the past few years view of the various structural factors that inform the change in the country's position in terms of the GCI. It is

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necessary to identify the underlying institutional and market barriers affecting business activities so that the government can be enabled to put in place appropriate measures in order to push up the country's position in the global competitiveness ranking. The overarching objective of this paper is to provide an understanding of the interplay of different institutional (political) and market (economy) forces undermining business competitiveness in Bangladesh. In addition, the paper seeks, *inter alia*, to:

- Assess factors, according to their severity, affecting business competitiveness environment in Bangladesh; and,
- Investigate intertemporal changes in business competitiveness environment in Bangladesh.

It seeks to analyse the business competitiveness environment in Bangladesh in relation to the global context with reference to WEF's *Global Competitiveness Report 2009-10* which shows a comparative scenario of Bangladesh's Business Environment on the global context.[1]

Methodology

This paper seeks to investigate and report on a number of factors, both macro and micro, affecting Bangladesh's business competitiveness environment. The paper blends in a mix of primary and secondary sources of information. As a secondary source of information, relevant literature, dealing with business constraints and priority areas which demand attention from the policymakers, was reviewed from the LDCs' perspectives. The paper refers to the ranking prepared under Global Competitiveness Index (GCI) of the *World Economic Forum* (WEF), based in Geneva, Switzerland. The number of countries taken under consideration for the GCI has been increasing over time and the latest GCI (2009-10) covers 133 countries. The GCI ranking is prepared by analysing data which is collected through a world-wide survey with support of partner organisations working all over the world. *Centre for Policy Dialogue* (CPD) in Bangladesh has been the WEF's partner organisation since Bangladesh's inclusion in the GCI ranking in 2001. With a reference period from January-December 2009, 'a survey was conducted'. By the think-tank during February-April 2010 in order to elicit information on competitiveness environment in the country for identifying major impediments which constrain efficient functioning of the business sector in the country.

Considering the size of the economy and the business operation, the number of respondent from Bangladesh is restricted to less than 100. The survey was designed to cover relatively large companies, i.e. those having total assets of no less than Tk. 100 million (US 1.04 million). Besides to ensure a high level of consistent response, those companies who had responded earlier remain in the list and each year some new companies from different sectors are included. Under these criteria, in 2009-10, 89 companies were surveyed, while the number of companies surveyed in 2008-09 was 91. The analysis has been performed by employing two statistical techniques. Firstly, frequency of the responses was calculated. Secondly, application of weighted index was applied for each of the questions to divide the distribution in six groups and then weighted average response of each question was computed and reported. One of the limitations of the frequency analysis method is that all the three levels of responses are treated with equal weight. To overcome this limitation, the weighted frequency analysis method was deployed.

Sample size:

The average weighted response (Rw) is defined as

$$Rw = \frac{\Sigma f_i x_i}{\Sigma f_i}, \ (i=1,2\ldots,7)$$

f_i = frequency

x_i = response levels

The value zero of Rw is considered as the demarcation value between the average positive and negative side response. If $Rw > o$, the response is overall positive; if $Rw < 0$, the response has been considered as negative. However, the distance of the score of the response from zero shows relatively stronger opinion on a particular indicator of business competitiveness environment.

Table 1: Average Weighted Response for Assessment of Business Environment in Bangladesh

	Response Levels						
	Completely Disagree	*Largely Disagree*	*Somewhat Disagree*	*Indifferent*	*Somewhat Agree*	*Largely Agree*	*Completely Agree*
Weight	-3	-2	-1	0	+1	+2	+3
Overall perception (Based on average weighted Response)	Overall perception is Negative, when majority disagreed				Overall perception is Positive, when majority agreed		
Groups	Worst (-3.0 to 2.01)	Worse (-2.0 to -1.01)	Bad (-1.0 to -0.01)	Neutral	Good (+0.01 to +1.0)	Better (+1.01 to +2.0)	Best (+2.01 to +3.0)

Source: Author's calculation

Various weighted responses are clustered into six groups which can be defined as follows according to the weighted response (see table 1):

a) Worst: (-3.0 to -2.01)   b) Worse: (-2.0 to -1.01)
c) Bad: (-1.0 to -0.01)   d) Good: (+0.01 to +1.0)
e) Better: (+1.01 to +2.0)   f) Best: (+2.01 to +3.0)

Organisation of the Paper

This paper is divided in three sections. *Section 2*, based on GCR 2009-10, offers a global snapshot to set the tone of the paper. *Section 3* discusses the state of business competitiveness environment in Bangladesh. It also assesses the political economy arrangement in Bangladesh, in terms of institutional and market structure, responsible for promoting and protecting business competitiveness. *Section 4* concludes.

Global Competitiveness Report (GCR) 2009-2010: A Snapshot

Since 2005, the *World Economic Forum* (WEF) has based its competitiveness analysis on the Global Competitiveness Index (GCI) which captures the microeconomic dynamics and macroeconomic foundations of business competitiveness on a national level. The survey was carried by the CPD from January 2009 to April 2009 and the final report was published in late 2009 by the WEF. In the 2009-10 survey, more than 13,000 of business leaders from a total of 133 countries were assessed. This year's survey revealed that top 10 countries in GCI 2009-10 remained the same as in GCI 2008-09, though there have been some major shuffling in case of countries' rankings (see table 2). Switzerland overtook the US as the world's most competitive economy. A stable economy, supported by a strong performance in financial market and technological advancement has contributed towards Switzerland's promotion in the GCI rank. On the other hand, the US declined to second place and this can be explained by a number of factors relating to the weakened financial markets and macroeconomic instability. Singapore moved up two ranks to 3rd place, remaining the top-ranked country from Asia. At a time when confidence in governments in many countries started to somewhat diminish, Singapore performed even more strongly than in past years; its institutions are considered to be the best in the world.

Within the BRIC group (Brazil, Russia, China and India) have continued to improve on their business competitiveness index. All three countries improved their ranks, with China and India each improving by one place and Brazil by a remarkable eight places. On the other hand, Russia's rank dropped by 12 places, losing significant ground in general competitiveness with a notable deterioration in financial market efficiency, an area where one would expect to detect some effects of the financial crisis.

In Africa, LDCs have witnessed strong improvement in their GCI ranks. Barring Mali, all of the African LDCs saw their ranks improve in the GCR 2009-10. Nevertheless, the same does not apply in case of South Asia. The region demonstrated a mixed result. India, Bangladesh and Nepal performed relatively better by improving their positions in the GCI ranking. Pakistan failed to improve on any of the basic determinants of its competitiveness whilst Sri Lanka's ranking fell by two positions, to 79th in GCI 2009-10 (77th in GCI 2008-09). Bangladesh has demonstrated improvement by advancing five positions to 106th in 2009-10 whereas the country ranked 111th in 2008-09. Meanwhile, a strong progress has been demonstrated by the African LDCs. A number of them were able to advance their ranking in 2009-10, particularly Uganda and Tanzania made a big jump; they have moved up 20 and 13 places respectively.

Table 2: Ranking of Some Selected Countries

Top ten countries			*Asian countries*			*African LDCs*			*BRIC*		
Economy	*2008-09*	*2009-10*	*Economy*	*2008-09*	*2009-10*	*Economy*	*2008-09*	*2009-10*	*Economy*	*2008-09*	*2009-10*
Switzerland	2	1	Bangladesh	111	106	Benin	106	103	Brazil	63	56
USA	1	2	India	50	49	Ethiopia	121	118	Russia	51	63
Singapore	5	3	Pakistan	101	101	Gambia	87	81	India	50	49
Sweden	4	4	Sri Lanka	77	79	Madagascar	125	121	China	30	29
Denmark	3	5	China	30	29	Mali	117	130			
Finland	6	6	Vietnam	70	75	Mozambique	130	129			
Germany	7	7				Uganda	128	108			
Japan	9	8				Tanzania	113	100			
Canada	10	9									
Netherlands	8	10									

Source: GCR surveys

Bangladesh in GCI Ranking and Change in GCI Scores

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Bangladesh recorded a good performance in 2009 GCI ranking by advancing five ranks to reach the 106th position, making substantial progress particularly in the basic requirements sub-index (see table 2.1). A positive change of 1.14 per cent in scores informs the country's progress at an absolute level. If we consider the same set of countries as of 2008-09 (134), Bangladesh would be ranked 107th instead of 106th in 2009-10. Though overall score marginally declined by about 0.22 per cent macroeconomic stability showed commendable progress in 2009-10 in spite of the global meltdown (GDP growth of 5-6 per cent in FY2009-10). In the pillar of public institutions, an improvement can be discerned (122nd from 127th); the score of this pillar has increased by 3.69 per cent. This improvement is likely to be related with various institutional reforms undertaken by the Caretaker Government in 2008 (particularly the Regulatory Reforms Commission). In the pillar of physical infrastructure Bangladesh was placed among the bottom ten. Due to the lack of improvement in various physical facilities, the country fell down to 126th place from 122nd, showing 8.14 per cent decrease in the score. Nevertheless, physical infrastructure has not constrained digital advancement and a marginal positive change can be observed in the innovation and sophistication sub-index; Bangladesh moved up one position this year ranking 114th.

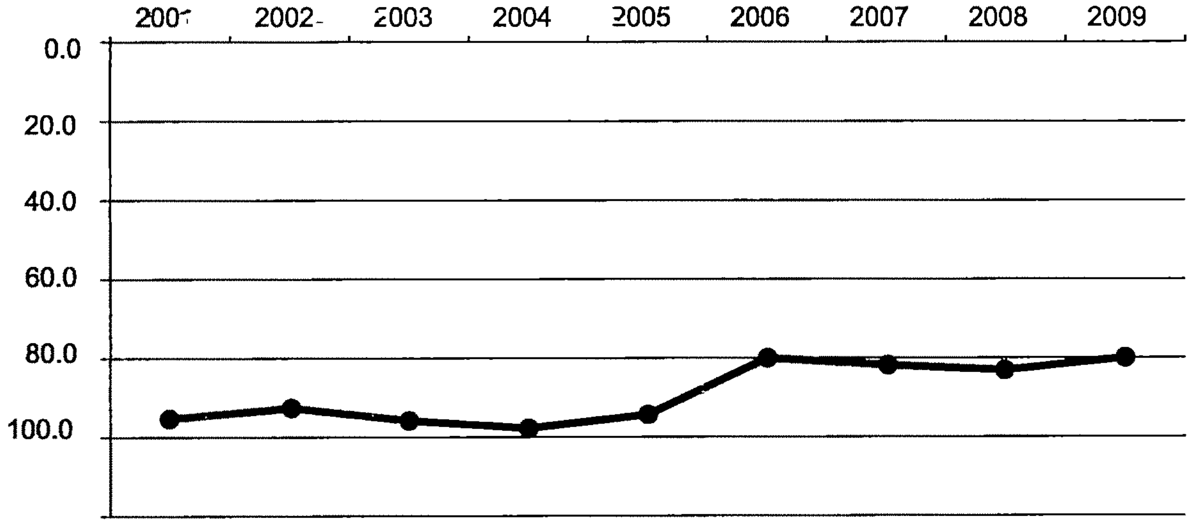
Table 2.1: Bangladesh's Rank and Score in GCI: (2008-09 vs. 2009-10)

Indices	*Rank*		*Score*		*% change in scores*
	2008-09	*2009-10*	*2008-09*	*2009-10*	
GCI	111	106	3.51	3.55	1.14
Basic Requirements	117	108	3.57	3.60	0.84
Public Institutions	127	122	2.98	3.09	3.69
Infrastructure	122	126	2.21	2.39	8.14
Macroeconomic stability	101	84	4.46	4.45	-0.22
Health and primary education	105	105	4.63	4.49	-3.02
Efficiency Enhancers	97	97	3.48	3.54	1.72
Higher education and training	131	129	2.51	2.57	2.39
Goods market efficiency	106	102	3.83	3.82	-0.26
Labour market efficiency	107	122	4.01	3.89	-2.99
Financial market sophistication	82	71	4.05	4.18	3.21
Technological Readiness	126	125	2.34	2.45	4.70
Market size	53	48	4.14	4.32	4.35
Innovation and sophistication	115	114	2.98	3.00	0.67
Business sophistication	105	100	3.46	3.47	0.29
Innovation	122	122	2.51	2.52	0.40

Source: GCR surveys

After being included in the GCR's list in 2001, Bangladesh has shown a modest improvement in business competitiveness index at least from the global perspective (see figure 1). The figure shows the trend of improvement over the years in GCI ranking out of at least 100 countries (as the number of countries vary each year). At the very beginning, Bangladesh ranked among the bottom 5 but after nine years, the country's GCI is on a strong, improving trend.

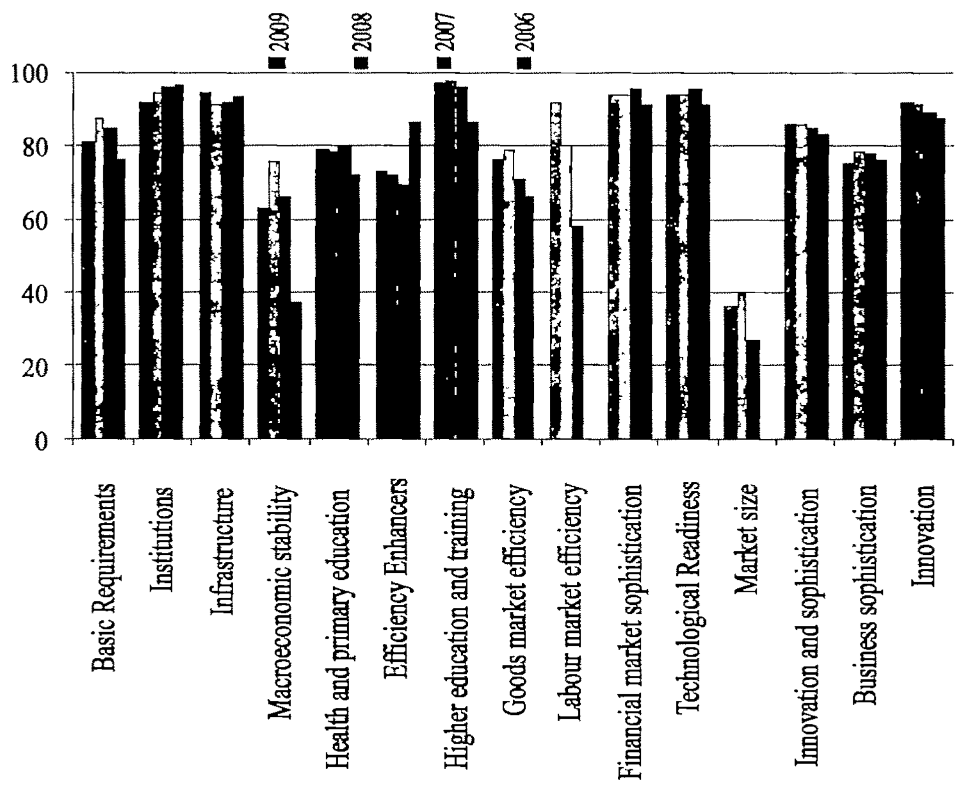
Bangladesh's Position since 2001 (Based on GCI Ranking)
(Out of 100)



Source: GCR surveys

Figure 1: Trends in GCI Rankings of Bangladesh

Efficiency enhancers, particularly the *size of the market* and the *efficiency of goods market*, have contributed the most toward Bangladesh's improvement in the GCI ranking. Under the basic requirements sub-index, macroeconomic stability and institutional development have made some progress (see figure 2).



Source: GCR surveys

Figure 2: Positions of sub-index and subsequent pillars from 2006 to 2009

Although Bangladesh's ranking in efficiency enhancers did not change in 2009 (positioning 97th), there are a number of areas of both comfort and concern within this sub-index. Major concern in this pillar is labour market efficiency where the country fell down 15 positions from previous year. Possibly, lack of adequate skilled workforce for diverse industrial activities is making the labour market inefficient. Overall increase in the score of efficiency enhancer is 1.72 per cent. Improvement of financial market's sophistication was a major factor for the positive upturn during 2009 (from 82 to 71; changes in score 3.21 per cent) perhaps related to prudent bank management, central bank's policy and overall role during the financial crisis. Bangladesh advanced 11 spots in GCI 2009-10 in the pillar of financial market sophistication, making an increase of 3.21 per cent in the subsequent score. Improvements in case of market size, goods market efficiency and technological readiness have contributed to consolidate the advanced position in efficiency enhancers in 2009.

Business Environment in Bangladesh: Assessing Political Economy Factors

The government of Bangladesh and the business community are generally aware of, and agree on, the existing barriers preventing the full realisation of business competitiveness factors. The findings in this section reveal various institutional and market related constraints facing Bangladesh's entrepreneurs today. According to Khatun (2008), Bangladesh's structural transformation from being aid dependent to trade reliant was possible due to the dynamic role played by the ready-made garments (RMG) sector of the country and the buoyant remittance inflows in recent times. Nevertheless, the RMG sector, and for that matter all other commercial activities, have not yet been able to translate the full potential into reality as a result of the prevailing political economy arrangements. In the following section, we will examine these factors hindering smooth operations of business activities. In order to evaluate the constraints, we have selected these according to their severity. In other words, institutional and market constraints, which were deemed to be the most hindering by at least 60.00 per cent of the respondents in the GCR survey, conducted by the CPD during February-April 2010, with reference to the year 2009 have been included in this paper's exercise.

Institutional Factors

Government and Public Institution

Business executives strongly supported the view that public trust in politicians is very low. More than 95.00 per cent of businessmen in 2008 and 90.00 per cent in 2009 expressed their dissatisfaction with regard to the role of politicians. By taking a retrospective view of the recent past, businessmen offered a negative impression on the trustworthiness of the politicians. There is hardly any disagreement within the business community regarding the weak governance structure, policymaking and implementation, public spending, has after tax system of Bangladesh as it not been able to improve, grow and make business more competitive in the world market. Over 90.00 per cent business executives are concerned about the centralised nature of economic policymaking which is highly opaque as a result of the control exercised by the incumbents. This is one of the most crucial ingredients responsible for fostering new entrepreneurial establishments and sustaining ongoing business activities (weighting response -2.15 compared to -2.03 last year). It is to be highlighted here that Bangladesh has one of the highest corporate taxes in the world. The country's tax system is complex indicating negative repercussions for the business environment in the country (-0.7 in 2009 with 62.30 per cent response). Suffice to mention that a high level of corporate tax rates would have limited the incentives of the businessmen to invest more in the country.

Table 3: State of the Government and Public Institution

Government and Public Institutions	2008-09		2009-10	
	Response (%)	Weighted Response	Response (%)	Weighted Response
Public trust in the financial honesty of politicians in the country is very low	95.6	-2.4	89.9	-1.79* ↑
When deciding upon policies and contracts, government officials moderately favour well-connected firms and individuals	89.1	-1.85	84.3	-1.38* ↑
Economic policy-making is mostly centralised - national government controls almost all important decisions	89.0	-2.03	92.0	-2.15 ↓
Complying with administrative requirements for businesses issued by the government is often burdensome	82.5	-1.57	82.0	-1.37* ↑
Police services often cannot be relied upon to enforce law and order	75.9	-1.20	71.9	-1.09 ↑

*Significant change since 2008

Source Authors' Calculation

Corruption, Ethics and Social Responsibility

It is now widely recognised that domestic firms pay bribes to officials in order to facilitate their business operations. It is of little surprise to note that similar to other neighbouring countries, nepotism is omnipresent in all spheres of the government's activity in Bangladesh. With a weighted response of -2, about 95.00 per cent business executives supported this opinion. It is to be underlined here that not only the domestic firms, but also foreign firms are paying bribes to public officials to get into their radar. Businessmen stated that judiciary in the country is not independent from the influence of members of government, and even high-income citizens or firms with high turnover rates (61.80 per cent response and -0.61 weighted response). More than three-fourth of business executives stated that due to corruption, diversion of public funds to companies and individuals or group is common (weighted response -1.36). Another 64.80 per cent respondents opined that corporate ethics of firms in the industry are worse than those in some other countries in the world (weighted response -0.76). Almost 78.00 per cent businessmen stated that illegal payments aimed at influencing government policies, laws or regulations have a negative impact on the company (weighted response -0.76 in 2009 compared to -0.85 in 2008).

Table 3.1: Extent of Corruption in Bangladesh

Corruption, Ethics and Social Responsibility	2008-09		2009-10	
	Response (%)	Weighted Response	Response (%)	Weighted Response
Domestic firms paying bribes to public servants or public officials are moderately common	90.2	-1.98	94.3	-2.00 ↓
Undocumented extra payments or bribes made by firms for import and export permits are moderately common	86.9	-1.74	85.1	-1.68 ↑
Undocumented extra payments or bribes made by firms for public utilities are moderately common	83.6	-1.68	86.2	-1.61 ↑
Undocumented extra payments or bribes made by firms for annual tax payments are moderately common	85.8	-1.73	87.4	-1.85 ↓
Undocumented extra payments or bribes made by firms for awarding of public contracts and licenses are moderately common	89.1	-1.77	95.3	-1.88 ↓

Source: Authors' Calculation

Infrastructure

Poor infrastructure has been one of the major constraints restraining not only industrial growth but also, a barrier for the emergence of new firms with new products. An overwhelming majority of the respondents (81.00 per cent) acknowledged infrastructure as the most severe constraint. This view is supported by the industrial performance in the fiscal year 2009 amply bears out that energy and power are severely undermining the growth prospects of the country's industrial sector (CPD, 2010). About 60.00 per cent respondents stated that port facilities, inland waterways and passenger air transport are moderately underdeveloped with weighted response -0.67 and -0.72. Indeed, it needs no highlighting that road traffic congestion has plagued the entire physical mobility system in Dhaka, Bangladesh's Capital city. Traffic immobility has become an integral part of those living and working in the Capital (Hasanuzzaman, 2009 for an interesting discussion on the traffic congestion problem in Dhaka).

Table 3.2: State of Infrastructure in Bangladesh

Infrastructure	2008-09		2009-10	
	Response (%)	Weighted Response	Response (%)	Weighted Response
General infrastructure of the country is moderately underdeveloped	9[illegible].4	-1.71	80.9	-1.19* ⬆
Roads in the country are moderately underdeveloped	7[illegible].9	-1.25	67.4	-0.85* ⬆
Railroads are moderately underdeveloped	9[illegible].3	-1.73	89.9	-1.57 ⬆
Passenger air transport is slightly underdeveloped	6[illegible].1	-0.58	61.8	-0.72 ⬇
The quality of electricity supply is worse than in most other countries	9[illegible].5	-1.91	97.7	-2.33* ⬇

*Significant change since 2008

Source: Authors' Calculation

Market Constraints

Innovation and Technology

Technology is increasingly moving to the core of the development of competitive business environment as it has the potential to revolutionise growth, development and ultimately, the advancement and modernisation process. Over three-fourth of the top business leaders agreed that scientific research institution are almost non-existent (weighted response -1.26 in 2009 compared to -0.58 in 2008) which has significantly deteriorated since last year. Collaboration between business community and local universities in the context of research and development (R&D) activities is abysmally low. With a poor technological endowment, Bangladeshi companies are finding it difficult to remain competitive in the global market. More than half of the business executives stated that digital contents in the country are sometimes not widely accessible via multiple platforms. Laws relating to the information and technology are often non-existent, as supported by 84.30 per cent business executives.

Table 3.3: Readiness in Technology and Development

Innovation and Technology	2008-09		2009-10	
	Response (%)	Weighted Response	Response (%)	Weighted Response
In the area of R&D, collaboration between the business community and local universities is moderately minimal	81.1	-1.48	76.4	-1.33 ⬆
Government procurement decisions do not often result in technological innovation	74.8	-1.30	77.3	-1.26 ⬆
Online government services are often unavailable	82.4	-1.95	91.0	-2.09 ⬇
Laws relating to the use of information technology are often non-existent	81.4	-1.75	84.3	-1.58* ⬆
Internet access in schools is very limited	93.4	-2.36	96.6	-2.18* ⬆

*Significant change since 2008

Source. Authors' Calculation

Business Operation and Sophistication

Competition in the local market is intense in most industries (62.10 per cent respondents with weighted response, 0.66). 77.30 per cent of respondents perceived that corporate activity is moderately dominated by a few business groups (weighted response, -1.15). Lack of policies, such as anti-monopoly and industrial cluster development, hinders the promotion of competitive business environment in the local markets (66.30 per cent respondents with weighted response, -1.05). Another 53.40 per cent of respondents believed that starting a new business is generally difficult (weighted response, -0.38). The situation has significantly declined from it was observed last year. State-owned enterprises play a somewhat dominant role in the economy (60.20 per cent respondents with weighted response, 0.64) and are sometimes favoured over private sector competitors (46.00 per cent respondents with weighted response, -0.13).

Exports to neighbouring countries are moderately limited (86.50 per cent respondents with weighted response, -1.69). Inevitably, this is not limited to domestic constraints but more towards the trade friendly nature of policies of the nearby countries. The fate of the South Asia Association for Regional Cooperation (SAARC) bears testimony to this fact that the South Asia region is yet to remove barriers inhibiting regional integration in order to provide free movement of goods and services, which would also put the SAFTA agenda in effect. Exporting companies sometimes sell primarily in a small number of foreign markets (60.20 per cent respondents with a weighted response, -0.57).

Table 3.4: State of Domestic Competition, Business Operations and Sophistication

Business Operations and Sophistication	**2008-09**		**2009-10**	
Domestic Competition	**Response (%)**	**Weighted Response**	**Response (%)**	**Weighted Response**
Corporate activity is moderately dominated by a few business groups	77.0	-1.31	77.3	-1.15* ⬆
State-owned enterprises play a somewhat dominant role in the economy	63.8	0.79	60.2	0.64 ⬇
Formal policies to support cluster development are somewhat non-existent	64.7	-0.98	66.3	-1.05 ⬇
Process machinery in the country is mostly imported	93.4	-2.02	93.2	-2.13 ⬇
Specialised research & training services are sometimes not available in the country	72.6	-0.93	65.2	-0.85* ⬆
Company Operations and Strategy				
Competitiveness of companies in international markets is often primarily due to low cost or local natural resources	87.7	-1.72	84.3	-1.46* ⬆
Exports to neighbouring countries are moderately limited	76.7	-1.34	86.5	-1.69 ⬇
Companies often do not spend money on research and development	91.3	-1.79	86.4	-1.72 ⬆
Production processes mostly use labour-intensive methods or previous generations of process technology	86.9	-1.71	82.0	-1.30* ⬆

*Significant change since 2008

Source: Authors' Calculation

Overall Perceptions of Economy

It was perceived by 67.8 percent of the respondents that the economy of Bangladesh would be in recession in 2009. The weighted average -0.86 has significantly declined from last year's -0.47. It has been a good sign for Bangladesh economy over the years that the threat of terrorism has not posed a major constraint in doing business here. Similarly, organised crimes are not that much of a threat to business competitiveness environment. Respondents share has declined in case of the last category, though the weighted response has worsened from -0.82 in 2008 to -0 93 in 2009.

Table 3.5 State of overall perception of economy of Bangladesh

Overall Perceptions of the Economy	2008-09		2009-10	
	Response (%)	Weighted Response	Response (%)	Weighted Response
The country's economy will have slight recession in the next 12 months	56.8	-0.47	67.8	-0.86 ⬇
The threat of terrorism does not impose much significant costs on businesses	53.9	0.64	42.7	0.18 ⬇
The incidence of common crime and violence imposes slight significant costs on businesses	51.7	-0.08	62.9	-0.61 ⬇
Organised crime (mafia oriented racketeering, extortion) does not impose much significant costs on businesses	47.3	0.47	39.3	0.11 ⬇
Unrecorded business activity is less than 50 per cent	65.1	-0.82	50.0	-0.93 ⬇

*Significant change since 2008

Source: Authors' Calculation

Identification of Political Economy Factors Responsible for Poor Business Environment

Businesses have to overcome many institutional and market related hurdles for smoothly running its operations in a low-income, corruption prone country like Bangladesh. These constraints are very much different in nature and affect the business functioning Entrepreneurs have identified major factors, particularly those which hinder their seamless functioning and were asked to assign the severity of those constraints/barriers. In the broadest term, these factors comprised of lack of financing, stringent labour regulations which is considered restrictive, regulations regarding foreign currency, lack of conducive physical infrastructure, inefficient government bureaucracy, inadequately trained workforce, poor work ethic in the national labour force, lack of consistency in policy formulation, government instability, crime and theft, corruption, tax regulation, tax rates, inflation, poor public health.

In lieu with a CPD Aid for Trade (AfT) survey, which was carried out in last 2008, the GCR 2009-10 also ranked infrastructure as the most severe barrier constraining smooth operation of business activities in Bangladesh (CPD, 2009 for more information of the AfT topic). The GCR 2009-10 survey revealed a thought-provoking issue with regard to the lead determining factors responsible for facilitating seamless operations of business activities - after nearly a decade of domination as the most hindering factor of doing business in Bangladesh, corruption has declined to the second spot. This is also supported by new studies carried out by the same researchers (Ibid).

Table 3.6: Rank of Lead Determining Factors, 2007 to 2009

Rank	*2007*	
	Factors	Value
1	Corruption	*23.7*
2	Inefficient govt. bureaucracy	*16.7*
3	Inadequate supply of infrastructure	*14.4*
4	Policy instability	*10.3*
5	Access to financing	*6.9*

Rank	*2008*	
	Factors	Value
1	Corruption	*17.5*
2	Inefficient govt. bureaucracy	*14.9*
3	Inadequate supply of infrastructure	*12.9*
4	Policy instability	*10.9*
5	Access to financing	*10.1*

Rank	*2009*	
	Factors	Value
1	Inadequate supply of infrastructure	*20.2*
2	Corruption	*16.9*
3	Inefficient govt. bureaucracy	*15.8*
4	Access to financing	*10.4*
5	Policy instability	*9.2*

Source: Authors' Calculation

Looking Ahead

All the economies around the globe are trying hard to be more competitive where improving their business environment will ultimately provide them with more investment, production and export, and above all, generating more employment opportunities. Bangladesh was included in GCR in 2001 and since then, the country has always been placed at the lower tier of the list. According to the GCI, Bangladesh was ranked 71 out of 75 countries in 2001, and its performance cannot be safely stated to have improved over time, and it reached at 106 out of 133 countries in 2009. It should be added that current macroeconomic management of Bangladesh is commendable but needs to travel miles to attain the sophistication and transparency at the international level. In order to be more competitive, Bangladesh needs to take measures for the short, medium and long-term under proper plans of action in terms of building infrastructure, making public institutions accountable and promoting innovation and technology development through fiscal incentives.

The developing world is now confronted with a situation in which the global recession has left its strong footprint in major OECD markets, which have further contributed toward the deterioration of the likelihood of encouraging aid and investment flows to LDCs. An economic slowdown in the OECD countries has already reduced the demand for commodities that were responsible for much of the recent growth in low-income countries. In terms of Bangladesh's macroeconomic outlook, falling export receipts and investment flows will make it more difficult to finance spending plans, while the dependencies of some of the governments on tariff revenues render their budgets vulnerable to potential reductions in trade flows (in particular imports). This makes the issue of sustaining business competitiveness all the more imperative.

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Financial Development, Openness Relation and the Role of Financial Institutions: A Case of Pakistan

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There is a lack of empirical research on the specific relationship between financial institutions, capital account liberalization and trade-openness, but there is no particular and comprehensive study on the theme in case of Pakistan This study investigates the importance of financial institutions, net financial capital inflows and trade-openness for financial sector's development. Further, it also examines the hypothesis by Rajan and Zingales (2003). In doing so, three approaches i.e. Johansen test, DOLS and ARDL bounds testing approach to cointegration have been applied for long-term relationship The empirical results reveal that long-term relationship among variables is robust.

Coefficient of net capital inflows is having positive impact on financial development Trade openness is the main contributor to financial sector's development On the other hand, financial institutions and economic growth also improve the efficiency of financial markets in the country. The rise in inflation declines the performance of financial sector

Keywords: *Capital Account Liberalization, Financial Development, Trade Openness*

Introduction

Now it has been accepted that financial markets and financial institutions constitute an important function for long run and sustained economic growth, particularly through allocating the finance to productive projects like investment in new plants which increases the potential of an economy. financial development transfers the incentives of producers towards the goods with increasing returns to scale, the intersectoral specialization and therefore structure of trade flows, is determined by relative level of financial intermediation (Goldsmith, 1969; King and Levine, 1993; Demirgue-Kunt and Maksimovic, 1999; Jayaratne and Strahan, 1996; Rajan and Zingales, 1998; Wurgler, 2000; Demetriades and Las, 2004; Goodhart, 2004; Butt et al., 2006; Shahbaz et al., 2007; Shhabaz, 2009). Relevant economic literature reveals positive and strong association between financial development and economic growth (Shahbaz, 2009). There is also large body of evidence in literature that studies the issue of causality and channels through which both financial development and trade openness affect the economic activity (Frankel and Romer, 1999 and Levine et al., 2000).

Financial development-Trade openness relationship has been investigated in relevant literature by two different modes; supply side and demand side[1]. Recently, Rajan and Zingales (2003) focus on the supply-side channel. It has been noted that interest groups and specially industrialists, and financial incumbents frequently stand to lose from financial development because it enhances the competition which erodes their rents. Incumbents worry about the threat of new entrants, have a lot of incentives to resist financial sector development and argue that their opposition will be weaker due to openness of an economy both regarding trade and financial. Therefore, simultaneous opening up of an economy by both trade and capital accounts is a key to success financial development. Trade and financial openness limits the ability of incumbents to slab the development of financial markets while new opportunities created through openness may become sufficient source of profits to conquer the loss of rents emanating from enhanced competition (Law and Demetriades, 2004; 2006; Baltagi et al., 2006)[2]. According to international finance theory, goods market openness can improve the supply of external finance, as it is aligned with the interests of the economically powerful who are more closely linked to the process of financial development or through the nature of specialization and improvements in sectoral structure, or through the space of innovation and technology transfer, activities that are likely to make intensive use of external finance. In contrast, Svaleryd and Vlachos (2000,

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2003), emphasize the role of risk diversification. To some extent, openness to trade is correlated with greater risks, such as increased exposure to external demand shocks or foreign competition will create new demands for external finance. Firms will need credit in order to overcome short-run cash flow problems and adverse shocks. This shows that the effects of trade on finance are likely to work primarily through the demand-side[3]. Haung and Temple (2005) have reported that if trade liberalization is followed by high projects of investment and lending booms, there could be a strong relationship between trade openness and financial development in short run. Thus, the pre-condition for financial liberalization policy appears to be the liberalization in the good markets.

Haung and Temple (2005) have concluded that openness to trade and financial development are strongly correlated for higher-income countries, but not for lower-income economies. Furthermore, they claim that openness has a greater link with bank-based financial development as compared to stock market development. Openness of trade provides benefits through specialization and scale of economies. If trade openness promotes financial development then it offers a more complex way by which trade may raise productivity and living standards. Svaleryd and Vlachos (2000) argue that openness to trade may be linked with high risks, including exposure to external shocks and foreign competition[4]. This will encourage the development of financial markets that can be used to diversify the risks and also help the firms to overcome short run adverse shocks (Beck, 2002 and Svaleryd and Vlachos, 2000)[5]. Levine and Renelt (1992) find a robust association between trade openness and investment and if trading economies are also high investment economies then this could promote financial development. Financial opening and succeeding trade opening leads to equity market development especially in an economy with a developed legal system. Financial opening requires trade openness. Consequently, openness to trade may also influence the demand for external finance through the space of innovation and technology transfer which requires intensive use of external finance.

Alessandria and Qian (2005) use a formal model to argue that capital account liberalization has ambiguous effects on the efficiency of domestic financial intermediaries. The empirical work by Aizenman and Noy (2003), Aizenman (2004) and, Chin and Ito (2005) suggests that capital account liberalization is often precede by goods market openness, perhaps trade integration makes restrictions on capital flows which appears difficult to sustain. But capital account openness is crucial for financial development. Financial opening guided by trade opening results in financial development but in a situation where the level of legal as well as institutional development is very well managed and controlled.

Considering the determinants of financial development, several studies have investigated the impacts of legal, regulatory and macroeconomic environment on functioning of banking sector and equity markets. In order for financial openness to develop equity markets, the institutional and legal development is imperative. If a country tries to develop its equity market when it is not equipped with well developed legal then opening capital accounts may even harm the development of the equity markets. Reduced level of corruption along with proper law and order condition, no doubt, increases the impact of financial opening on the development of equity markets. In this way, countries can definitely benefit from opening its financial markets. Among less developed countries, development of the banking sector is a necessary condition in order to develop the equity markets. Thus the two are complementary to each other.

Infact, benefits from financial liberalization accrue more to those financial systems, which are legally as well as institutionally highly developed. The positive effects of these highly developed systems emerge from the level of accounting standards and also from the shareholder protection. La Porta et al., (1998) note that origin of legal code is very much important for financial depth. The main is that legal systems differ in their treatment of creditor and shareholders with contract enforcement. Rajan and Zingales (2003) point out that government regulation is needed to ensure effective contract enforcement, and transparency in accounting and disclosure. When this contract enforcement is used as institutional as well as legal indicator along with the equity market development then positive interactive effect is seen and a negative effect of the level of financial openness is also witnessed if it is observed independently.

Regulations concerning information disclosure, accounting standards, permissible practices of banks and despite insurance do appear to have material effects on financial development (Mayer and Sussman, 2001). Huybens and Smith (1999) examine theoretically, and Boyd, Levine and Smith (2001) empirically, the effects of inflation on financial depth. They also conclude that economies with higher inflation rates are likely to have smaller, less active and less efficient banks and equity markets. Financial development can, in turn, influence the structure and extent of trade. Kletzer and Bardhan (1987) and Beck (2002) develop a model in which countries with well-developed financial markets will tend to have comprehensive advantage in manufacturing[6]. Becker and Greenberg (2004) argue that in countries with good finance, the short-run elasticity of exports is considerably higher and the allocation of exports across importing countries is much more sensitive to relative exchange rates. Rajan and Zingales (2003) find that, industries, which are more in need of outside financing, grow more quickly when financial sector is more developed.

The relationship between institutions and trade openness has received great attention now-a-days. The growing literature focuses how quality of institutions may affect comparative advantage and international specialization (Becker and Greenberg, 2004). Grossman and Helpman (2004) study how institutional problems limit the amount of outsourcing to low-wage countries. Levchenko (2003) models how institutions generate comparative advantage, and finds that net exports in industries that depend on external finance are higher in countries with good finance[7]. There has also been a debate regarding precise channel through which a country's institutional inheritance affects financial development (Berglof and Thadden, 1999; Coeffee, 2000; La Porta et al., 1999; Rajan and Zingales, 1998; Stulz and Williamson, 2001, 2003). Moreover, Beck et al., (2003) emphasis their attention on the historical determinants of financial development and do not investigate any of the intermediate linkages. It could be, for example, that the relationship between initial endowments and subsequent financial development reflect factors other than the development of institutions that are conducive to financial development.

Recent study conducted by Law and Demetriades (2006), indicates that simultaneous openness to both trade and capital inflows has a positive influence on financial development, in tandem with (institutions) hypothesis, while the quality of country's institutions has a separate influence on financial development[8]. It has been argued by a number of times that by means of financial development, the economic development is effected by capital account liberalization. Markets that are financially liberalized have a positive impact in the development of the financial markets. These developed financial markets are the main source of funds for the borrowers who have productive investment opportunities. There are a number of ways in which capital account liberalization helps in the development of the financial system. Financial liberalization or the process of financial globalization often reduces the cost of equity capital thereby giving rise to an easy access to the borrowers. This situation emerges on account of lower expected returns, which generally compensate for the risk. Moreover, in the process of liberalization the inefficient financial institutions are wiped out. This creates demand for overall reforms of the financial infrastructure resulting in an efficient financial system and increased credit availability. Finally, Shahbaz et al., (2010) report the determinants of financial development. Their results indicate that government spending and foreign remittance increase the efficiency of financial sector while inflation declines the performance of financial institutions.

The contribution of institutions and openness to improve financial sector development in economic growth in Pakistan has not been investigated with respect to particular concern in an appropriate direction. This study seems to be s good attempt to start this direction using annually data set. This paper is advance over previous literature by three folds; first, it provides a direct observation of R-Z hypothesis utilizing the specified equations not only controlling the conventional determinants of financial sector development but also including the literacy rate and inflation. Second, it has used annual data set covering period 1971-2006, which is sufficient to enable robust conclusions to be drawn from econometrics results. Finally, three alternative techniques (Johansen Maximum Likelihood Test, DOLS (dynamic ordinary least squares) and ARDL Co-integration techniques) have been used for the robustness of long run results and error correction model (ECM) for short run dynamics. The objective of such endeavor is to investigate the impact of financial institutions and openness of trade on financial development. The rest of the paper is balanced as: section II explains the model and data collection procedure and methodology, and section III investigates the empirical interpretations. Finally, section IV presents the conclusion and policy implications.

Empirical Model, Methodological Framework and Data

Basing on the model specified by Law and Demetriades (2004, 2006) and Baltagi et al., (2006) in log-linear form for financial development is being modeled as following:

$$LFD = \beta_o + \beta_1 LGNPC + \beta_2 LINS +$$

$$\beta_3 LCIF + \beta_4 LTR + \beta_5 IFL + \beta_6 LR + \mu_t \cdots (1)$$

Where

FD = Credit to private sector as share of GDP

$GNPC$ = Real per capita GNP

INS = Index for Quality of financial institutions[9].

CIF = Capital financial inflows proxy for Financial Openness

TR = Trade-Openness (Exports + Imports / GDP)

IFL = Annual inflation

LR = Literacy rate proxy for Human capital formation

We have utilized log-linear modeling specification as given above. Bowers and Pierce (1975) suggest that Ehrlick's (1975) findings with a log-linear specification seem to be sensitive to functional form. However, Ehrlich (1977) and Layson (1983) argue on theoretical and empirical grounds that the log-linear form is superior to the linear specification. Similarly, Cameron (1994) and Ehrlich (1996) suggest on basis of their conclusion that a log-linear form is more likely to provide comprehensive and reliable results than former one. In order to investigate directly the hypothesis generated by Rajan and Zingales (2003); an interaction term between the last two variables is included in the model as follows:

$$LFD = \alpha_0 + \alpha_1 LGNPC + \alpha_2 LINS$$
$$+ \alpha_3 LCIF + \alpha_4 LTR + \alpha_5 IFL + \alpha_6 LR$$
$$+ \alpha_7 L(CIF * TR) + \eta_t \qquad \ldots (2)$$

Equation (1) and (2) provide the basis for the empirical models those are in the present study. If α_7 is found to be positive and statistically significant, then this would imply that a combination of capital account liberalization and trade openness exerts an independent influence on financial sector's development, over and above any influence each of these two variables may separately have on financial development. Thus, $\alpha_7 > 0$ supports to the Rajan and Zingales (2003) hypothesis.

In the time series data realization is used to draw inference about the underlying stochastic process. Therefore drawing inference from the time series analysis, stationary tests become essential. A stationary test, which has been widely popular over the past several years, is unit root test. In this study Augmented Dickey-Fuller (ADF) and Philip-Perron PP) tests have been applied to estimate unit root. Data on domestic credit to private sector as share of GDP for financial development, trade as share of GDP and GNP at constant market prices is collected from WDI (World Development Indicators, 2007) while International Financial Statistics (2007) has combed for inflation. The data on the quality for financial institutions employed in the present study is generated by authors based on methodology used by Shahbaz et al., (2007). Higher the value of index implies better financial institutional quality and vice versa. Net capital inflows is proxy for financial openness[10] and data is available in WDI (World Development Indicators, 2007). Literacy rate is obtained from annual report of Social Policy and Development Centre (2006). Finally, interaction term between financial capital inflows and trade openness can be quantified since this should have positive impact on financial development as highlighted in the theory. Table 1 provides descriptive statistics and correlation matrix of variables.

Table 1 describes that financial capital inflows, trade openness, financial institutions, literacy rate and GNP per capita weakly correlated with domestic credit to private sector as share of GDP (financial development) while inflation is weakly and negatively associated with financial development. Financial capital inflows is also highly correlated with trade openness and financial institutions, and GNP per capita while GNP per capita and literacy rate are positively correlated with financial institutions, and literacy rate is positively and strongly associated with GNP per capita. Finally inflation is correlated weakly and inversely with GNP per capita and human capital formation as shown in Table 1.

Table 1: Descriptive Statistics and Correlation Matrix

Variables	FD	CIF	TR	INS	GNPC	LR	IFL
Mean	26.099	2.772	33.438	100.802	14249.0	35.215	8.900
Median	27.105	2.393	34.150	101.462	13884.0	34.515	8.050
Maximum	33.500	5.656	38.900	105.244	27000.0	50.000	26.660
Minimum	3.300	0.633	19.900	93.851	5284.8	22.900	2.910
Std. Dev.	4.989	1.610	3.782	2.657	5025.0	7.619	5.411
Skewness	-2.692	0.341	-1.323	-0.622	0.871	0.163	1.652
Kurtosis	13.282	1.7189	5.7427	2.972	3.542	2.013	5.760
Jarque-Bera	202.086	3.161	21.794	2.328	5.003	1.619	27.805
Probability	0.000	0.205	0.000	0.3121	0.081	0.445	0.000
Observations	36	36	36	36	36	36	36
FD	1.000						
CIF	0.124	1.000					
TR	0.049	0.574	1.000				
INS	0.368	0.576	0.189	1.000			
GNPC	0.028	0.668	0.215	0.758	1.000		
LR	0.091	0.738	0.205	0.756	0.946	1.000	
IFL	-0.372	-0.158	0.232	-0.468	-0.443	-0.460	1.000

This study utilizes the three alternative approaches for the robustness of stable long run relationship among the variables.

Co-integration Johansen Test

When all the variables are non-stationary at their level but stationary in their 1st difference, this means to proceed further to imply Johansen cointegration test. It is accepted that two variables will be cointegrated if they have a long term relationship between them. Thus cointegration of two series suggests that there is a long run integration and of course, approach developed by Johansen (1991,1995) and Johansen and Juseluis (1990) can also be employed if the variables have mixed order of integration such as I(0) or I(1) or I(1) / I(0) (Pesaran and Shin, 1999; and Pesaran et al. 1996; 2001). The general form of the vector error correction model is as follows:

$$\Delta y_t = \alpha_\circ + \alpha_1 t - \prod z_{t-1} + \sum_{i=1}^{p-1} \Gamma_i' \Delta z_{t-1} + \psi w_t + \mu_t \qquad (3)$$

where;

$z_t = (y_t', x_t')...y_t$ is an $m_{yx}1$ vector of endogenous *I(1)*

var x_t is an $m_{yx}1$ vector of exogenous of exogenous *I(1)* variables.

$$\Delta x_t = \alpha_\circ + \sum_{i=1}^{p-1} \Gamma'_i \Delta z_{t-1} + \Psi w_t + \mu_t ....w_t \text{ is} \quad a$$

q*1vector of exogenous /deterministic variables I(0).

In model, the disturbance vector of e_t and w_t satisfy the assumptions:

(a) $\mu_t = (e_t w_t) iid(0, \sum\ )$

Σ = a symmetric positive-definite matrix

(b) μ_t = (the disturbance term in the combined model) are distributed independently of w_t i.e. $E(\mu_{t}, w_t) = 0$ $\alpha_\circ$ *and* α_1...intercept and trend coefficients respectively. ·

$\prod$ = long run multiplier matrix i.e. $\prod_y$ multiplier matrix of order $(m_y + m)$

Where m = $(mx + my)$

$\Gamma'_{1y} - \Gamma'_{p-1,y}$ = Coefficient matrices capture the short dynamic effects and are of order m_y*m

Ψ_y= the m_y*m matrix of coefficients on the I(0) exogenous variables.

DOLS Method

As an alternative practice, which has certain advantages over the simple Ordinary Least Square (OLS) and Johansen cointegration approach, has been planned by Stock and Watson (1993). The main reason for applying this test is that Johansen full informative technique is unable to tackle the problem, that parameter estimates in one equation are affected by any misspecification in other equations (Azzam and Hawdon, 2000). The Stock and Watson (1993) is dissimilar by a robust single equation approach, which corrects for regressor endogeneity through inclusion of leads and lags of first differences of regressors, and for serial correlated errors by a Generalized Least Square (GLS). The estimator (DOLS) is asymptotically correspondent to Johansen's (1988) trace test when all variables included in the regression are having *I(1)* order of integration (Masih and Masih, 1996). Moreover, it performs well in finite samples relative to other asymptotically efficient estimator (Stock and Watson, 1993). In relevant circumstances, it is known that the Engle-Granger (1987) estimator may reveal substantial bias (Banerjee et al., 1998 and Stock-Watson, 1993). Engle-Granger estimator suffers from a non-standard asymptotic distribution while DOLS estimator provides valid and efficient inferences on the parameters of the cointegrating vectors. The reduced form equation of Dynamic Ordinary Least Square (DOLS) is given below:

$$LFD = \beta_c + \xi_S Xs - \sum_{i=-n}^{i=n} \beta_1 \Delta LGNPC_{t-i}$$

$$+ \sum_{i=-n}^{i=n} \beta_2 \Delta LINS_{t-i} + \sum_{i=-n}^{i=n} \beta_3 \Delta LCIF_{t-i} + \sum_{i=-n}^{i=n} \beta_4 \Delta LTR_{t-i}$$

$$+ \sum_{i=-n}^{i=n} \beta_5 \Delta IFL_{t-i} + \sum_{i=-n}^{i=n} \beta_5 \Delta LR_{t-i} + \eta_t \qquad \ldots (4)$$

ARDL Bounds Approach to Cointegration

Recently, an emerging body of literature led by Pesaran and Shin (1995), Pesaran, Shin and Smith (1996), and Pesaran, Shin and Smith (2001) has introduced an alternative cointegration approach termed as "Autoregressive Distributive Lag Model" or **ARDL** bounds testing. It is argued that ARDL has several advantages over conventional techniques like Engle-Granger and Johansen cointegration approaches. The first advantage of ARDL is that it can be applied irrespective of whether underlying regressors are purely *I(0)*, purely *I(1)* or mutually cointegrated (Pesaran and Pesaran, 1997). The second advantage of using the bounds testing approach to cointegration is that it performs better than Engle and Granger (1987), Johansen (1990) and Philips and Hansen (1990) cointegration tests in small samples (see for more details Haug, 2002). The third advantage of this approach is that, the model takes sufficient number of lags to capture the data generating process in a general-to-specific modeling framework (Laurenceson and Chai, 2003). However, Pesaran, Smith and Shin (1996) contented that "appropriate modification of the orders of the ARDL model is sufficient to simultaneously correct for residual serial correlation and the problem of endogenous variables".

After the lag order for ARDL procedure, OLS may be utilized for estimation and identification. Valid estimation and inference can be drawn through presence of unique long run association that is crucial[11]. Such inferences not only on long run but also on short run coefficients may be made which concluded that the ARDL model is correctly augmented to account for contemporaneous correlations between the stochastic terms of the data generating process (DGP) included in the ARDL estimation. It is also noted that ARDL estimation is possible even where explanatory variables are endogenous. Moreover, ARDL remains valid irrespective of the order of integration of the explanatory variables. But ARDL procedure will collapse if any variable is integrated at ***I(2)***. The **PSS** (2001) procedure is implemented to estimate error correction model given such an equation:

$$Y = \alpha_{.} + \sum_{i=1}^{n} \beta_i \Delta Y_{t-i} + \sum_{j=1}^{m} \sum_{i=1}^{p} \phi_{ji} \Delta X_{t-1}$$

$$+ \left(\delta_1 Y_{t-1} + \sum_{j=1}^{k} \gamma_1 X_j \right) + \eta_t \qquad (5)$$

PSS F-test is estimated by imposing zero-joint restriction on $\delta' s$ in error correction model. Distribution of PSS F-test is non-standard (Chandana, 2001). The reason is that lower and upper critical bounds are generated by PSS (1996). Lag order of ARDL model is selected on lower value of AIC. After empirical estimation, if PSS (2001) confirms the presence of unique cointegration vector among variables. This shows that one is outcome variable while other is forcing variable. On basis of selected ARDL, long run and short estimates can be investigated in two steps (Pesaran, Smith and Shin, 2001).

Assuming that an ARDL (p, q) just for which presence of association between x_t & y_t for **long span of time** has been recognized. Long run relationship between the variables can be established by estimating ARDL model as given by means of Ordinary Least Squares (OLS):

$$Y = \varpi + \sum_{i=1}^{p} \beta_i Y_{t-1} + \sum_{i=0}^{q} \vartheta_i X_{t-i} + v_t \qquad (6)$$

Where v is normally distributed error term. Long run (cointegration) coefficients can be obtained:

$$Y = \alpha + \rho X + \mu_t \qquad (7)$$

from:

$$\hat{\alpha} = \frac{\hat{\varpi}}{1 - \sum_{i=1}^{p} \hat{\beta}_i}, \quad \& \quad \hat{\rho} = \frac{\sum_{i=0}^{p} \hat{\rho}_i}{1 - \sum_{i=1}^{p} \hat{\beta}_i} \qquad (8)$$

Firstly, we try to find out the direction of relationship between financial development and its determinants in the case of Pakistan by analyzing the **PSS** F-test statistics. The calculated *F-statistic* is compared with the critical value tabulated by Pesaran and Pesaran (1997) or Pesaran et al., (2001). If the *F*-test statistic exceeds the upper critical bound (UCB) then null hypothesis of no long-run relationship can be rejected regardless of whether the underlying orders of integration of the variables are *I(0)* or *I(1)*. The null hypothesis is not rejected if the *F*-test statistic falls below the lower critical bound (LCB). However, if the sample *F-test* statistic falls between LCB and UCB then result is inconclusive.

The ARDL method estimates $(p+1)^k$ number of regressions in order to obtain optimal lag length for each variable, where p is the maximum number of lags to be used and k is the number of variables in the equation. The model can be selected using the model selection criteria like Akaike Information Criteria (AIC). In the second step, the long run relationship is estimated using the selected ARDL model. The short run relationship among the variables is being investigated by using error correction model as given below:

$$\begin{aligned} \Delta LFD = {} & \beta_{\circ} + \sum_{J=0}^{n} \beta_1 \Delta LCIF_{t-j} \\ & + \sum_{j=0}^{n} \beta_2 \Delta LGNPC_{t-j} + \sum_{j=0}^{n} \beta_3 \Delta IFL_{t-j} + \sum_{j=0}^{n} \beta_4 \Delta LINS_{t-j} \\ & + \sum_{j=0}^{n} \beta_5 \Delta LR_{t-j} + \sum_{j=0}^{n} \beta_6 \Delta LTR_{t-j} + \eta ecm_{t-1} + \mu_t \end{aligned} \qquad (9)$$

To find out the integrity of goodness of fit of the **ARDL** model, the sensitivity analysis and the stability tests are also conducted. The diagnostic test examines the serial correlation, functional form, normality and heteroscedisticity associated with the model. The stability test is conducted by employing the cumulative sum of recursive residuals (**CUSUM**) and the cumulative sum of squares of recursive residuals (**CUSUMsq**).

Empirical Results

Before proceeding to Johansen cointegration, Dynamic Ordinary Least Squares Technique (DOLS) and ARDL bounds testing, we tested unit root problem among the variables. This is to ensure that the variables are not ***I(2)*** stationary so as to avoid spurious results. According to Ouattara (2004) in the presence of ***I(2)*** variables the computed F-statistics provided by Pesaran et al. (2001) are not valid because bounds test is based on the assumption that the variables are ***I(0)*** or ***I(1)***. Therefore, the implementation of unit root test in the ARDL procedure might still be necessary in order to ensure that none of the variable is integrated at I(2) or beyond. In doing so, Augmented Dickey-Fuller (ADF) and Philip-Perron (PP) tests have been used. The lag length for the ADF tests is selected to ensure that the residuals are white noise.

Table 2: Unit-Root Estimation

Variables	*ADF test at 1st difference*	Lags	Prob-value	P-P test at 1st difference	Bandwidth	Prob-value*
LFD	-5.6029	0	0.0003	-5.6029	0	0.0003
LCIF	-8.7998	0	0.0000	-9.2418	3	0.0000
LINS	-6.0557	0	0.0001	-6.2449	3	0.0001
LTR	-6.7799	0	0.0000	-7.4465	3	0.0000
IFL	-5.3225	0	0.0007	-5.2987	3	0.0007
LGNPC	-5.3296	0	0.0007	-5.3615	5	0.0006
LR	-6.0657	0	0.0001	-6.0604	3	0.0001

Lag Length Selection of VAR Model

Lags	Akaike Information Criteria	Schwarz Criteria	Log Likelihood
1	-15.6343	-13.1203	321.7832
2	-17.9331	-13.1715	400.8965

Notes: * MacKinnon (1996) one-sided p-values.

Both tests provide that all variables have unit problem at their level and are stationary at 1st difference as reported in Table 2 The initial step for both Johansen and ARDL approach to apply is the selection of appropriate lag length. The data span is from 1971 up to 2006 In such small sample data set we can not take lag more than 2 on basis of minimum value of AIC. Literature reveals that the calculation of ARDL F-statistics is very much sensitive with selection of lag order in the model (Bahmani-Oskooee and Brooks, 1999; Bahmani-Oskooee, Economidou, and Goswami, 2006; Bahmani-Oskooee and Harvey, 2006). The inclusion of intercept and trend is based on assumptions of Pesaran et al., (2001).

Table 3: Johansen First Information Maximum Likelihood Test for Co-integration

Hypotheses	Likelihood ratio	5 percent critical value	Prob-value	Maximum Eigen values	5 percent critical value	Prob-value
$R = 0$	298.4103	125.6154	0.0000	133.6875	46.23142	0.0000
$R \leq 1$	164.7233	95.75366	0.0000	72.24387	40.07757	0.0000
$R \leq 2$	92.47940	69.81889	0.0001	46.31929	33.87687	0.0010
$R \leq 3$	46.16011	47.85613	0.0712	24.47424	27.58434	0.1190
$R \leq 4$	21.68587	29.79707	0.3162	11.22292	21.13162	0.6251
$R \leq 5$	10.46295	15.49471	0.2468	7.160792	14.26460	0.4703
$R \leq 6$	3.302167	3.841466	0.0692	3.302167	3.841466	0.0692

The results from the Johansen cointegration analysis are reported in Table 3. Both the maximum eigen value and trace-test value examine the null hypothesis of no cointegration against the alternative of cointegration. Starting with the null hypothesis of no cointegration ($R = 0$) among the variables, the trace-test statistics is 298.4103, which is above 1% and 5% critical values respectively. Hence it rejects null hypothesis $R \leq 0$ in the favor of general alternative $R = 1$. As is the evidence in Table-3, the null hypothesis of $R \leq 1$ can be rejected at 1% level of significance hence its alternative of $R = 2$ is accepted. Consequently, we conclude that there are three cointegrating vectors among financial development, financial capital inflows as proxy for financial openness, financial institutions, trade, inflation, literacy rate and GNP per capita. This confirms the existence of long run relationship between among the variables.

Turning to the maximum eigen value test, the null hypothesis of no cointegration ($R = 0$) is rejected at 1% level of significance in the favor of general alternative, that is one cointegrating vector, $R = 1$. The test also rejected the null hypothesis of $R = 1$ in the favor of the alternative $R = 2$. This is a confirmed conclusion that overall there are three cointegrating relationship amongst the variables. Therefore, over annually data from 1971 to 2006 appears to support the proposition that in Pakistan there exists, a stable long-run relationship among financial development, financial capital inflows as proxy for financial openness, financial institutions, trade, inflation, literacy rate and GNP per capita.

After the estimation of Johansen test for cointegration, we have turned to apply the DOLS Stock-Watson (1993) for long run relationship between financial development and its determinants. Following equation-4, we have estimated including up to $i = \pm 1$ leads and lags while insignificant leads and lags are excluded. GNP per capita, financial openness and financial institutions alongwith trade-openness affected the financial development positively while inflation and literacy rate are inversely associated with financial development. The Stock-Watson (1993) version of equation-1 shows robustness from standard regressions assumptions in terms of residual correlation, heteroscedisticity, misspecification of functional form, autoregressive serial correlation and non-normality of residual as shown in the appendix-2. Finally, stability tests like CUSM and CUSUMsq both suggest that estimated model is stable over the sample period see figures 1 and 2 in Table 7 in appendix 3.

Table 4: F-statistic of Co-integration Relationship

Test-statistic	Calculated-Value	Lag-order	Significance level	Bound Critical Values(restricted intercept and no trend)	
F-statistic	4.81	1		I(0)	I(1)
	14.97	2	1%	5.25	6.36
			5%	3.79	4.85
			10%	3.17	4.14

Short Run Diagnostic Tests
Serial Correlation LM Test =0.0466 (0.954)
ARCH Test = 0.8574 (0.361)
White Heteroskedasticity Test = 0.7009 (0 757)
Normality J-B Value = 6.9890 (0 030)
Ramsey RESET Test = 0.3543 (0.557)

The results of bounds testing approach to cointegration show that the calculated *F-statistic* is 14.97, which is higher than the upper level of bound i.e. 6.36 at 1 percent level of significance. This tends to imply that the null hypothesis of no cointegration cannot be accepted which shows cointegration relationship among the variables.

Table 5 reports the long run impacts of forcing variables on financial development. in doing so, ARDL-OLS version is used for long run estimates. It is important to note that the signs of all estimated coefficients of explanatory variables are consistent and highly significant according to the theory except literacy rate, which is proxy for human capital formation having negative impact on financial development. Financial capital inflows proxy for financial openness is associated positively with financial development and significant at 10 percent level of significant. A 1% increase in financial openness will improve the efficiency of financial sector by 0.037%. This shows that financial openness is also important determinant of financial development but with low coefficient perhaps due to less proper use of financial capital inflows in the economy.

Real GNP per capita impacts financial sector positively at 10 percent level of significance. It is noted that 1% increase in economic growth boosts the development in financial sector by 0.13%. Human capital formation affects the performance of financial sector negatively. It shows that 0.34% financial development is declined by 1% increase in human capital formation. This situation indicates that there is large gap between technical education required for improvement in the performance of financial sector and education provided by academic institutions[12]. Rise in inflation is harmful for the improvement in financial sector's performance through its detrimental channels[13]. A 0.092% efficiency of financial sector is eaten up by 1% increase in inflation. The quality of financial institutions is positively correlated with financial sector development. A 1% increase in the quality of financial institutions will enhance the financial development by 0.32%. Trade openness is also an important indicator for financial development. A 0.27% financial development will be raised by 1% increase in trade openness.

Table 5: ARDL-OLS of Regression

Dependent Variable: LFD		
Variables	**Model**	**Model**
Constant	-12.299 (0.000)	-12.719 (0.000)
LCIF	0.0371 (0.1083)	0.4390 (0.3598)
LGNPC	0.1340 (0.0918)	0.1323 (0 0980)
LINS	0.3194 (0.0000)	0.3246 (0.0000)
LTR	0.2711 (0.0213)	0.3281 (0.0180)
IFL	-0.0924 (0.0000)	-0.0872 (0.0001)
LR	-0.3451 (0.0021)	-0.3484 (0.0021)
LCIF*LTR		-0.1133 (0.4007)
R^2	0.9059	0.9084
Adjusted-R^2	0.8849	0.8838
F-Statistics	43.32 (0.00)	36.86(0.00)
Durbin-Watson	1.380	1.947

Note: Prob-values are given in parenthesis

After including the interaction term (LCIF*LTR) to check the combined impact of financial openness and trade openness, results are given in second column of Table-5. Results reveal that coefficient of interaction term indicates no-existence of Rajan and Zingles (2003) hypothesis in Pakistan. The estimated-coefficient of interaction term is negative and insignificant, which predicts that the combination of financial and trade openness does not exert any independent impact on financial development except separate influence of each variable on it. The main reason is that beneficial effects from financial openness could not be attained due to the low performance of financial sector.

Table 6 reports the short-run coefficient estimates obtained from the ECM version of ARDL model. The error correction term $\mathbf{ecm}_{t-1}$ measures the speed of adjustment to restore equilibrium in the dynamics model. The negative sign of $\mathbf{ecm}_{t-1}$ term with significance is another way to confirm the established cointegration. The results of short run dynamic model are reported in Table-6. The estimated value of error correction term is -0.6476 which is highly significant at 1% level of significance. This implies a high speed of adjustment to equilibrium level after a shock of per year.

Table 6: ECM-ARDL-OLS Regression

Dependent Variable: Δ LFD		
Variables	**Coefficients**	***Prob*-values**
Constant	0.0032	0.5835
ΔLCIF	0.0083	0.6176
ΔLGNPC	0.1646	0.0060
ΔIFL	-0.0526	0.0057
ΔIFL(-1)	-0.0284	0.0926
ΔLINS	.21275	0.0000
ΔLR	-0.2602	0.0132
ΔLTR	0.1249	0.1705
$\mathbf{ecm}_{t-1}$	-0.6476	0.0011
R-squared = 0.8663	Akaike info criterion = -3 8399	
Adjusted R2 =0 8218	Schwarz criterion = -3.4317	
Durbin-Watson stat =2 08	F-statistic = 19.45 (0 00)	

Note: ARDL (1, 1, 1, 2, 1, 1, 1) selected on the basis of AIC

$$\mu_t = -0.003 - .008\Delta LCIF - 0.16\Delta LGNPC$$
$$+ .05\Delta IFL + \Delta IFL_{t-1} - .21\Delta LINS + 0.26\Delta LR$$
$$- .12\Delta LTR + 0.64 Eecm_{t-1}$$

Approximately 64.76% of disequilibrium from the previous year's shock converges back to the long run equilibrium in the current year. Therefore, improvement in the quality of financial institutions is found significant at 1 percent level of significance and positively associated with financial development. GNP per capita and trade openness are having positive impact with significance and insignificance respectively. Inflation and human capital formation are inversely correlated with financial development. Finally, financial openness effects financial sector positively but it is insignificant in short run.

Sensitivity Analysis

Table 3 presents the output of diagnostic tests that have conducted to investigate serial correlation, normality of error term, autoregressive conditional heteroscedisticity, white heteroscedisticity and misspecification of the model. The empirical psychology indicates that short-run model passes through the sensitivity analysis or diagnostic tests in the first phase. It is witnessed that there is no evidence of serial correlation and, model passes the test for normality. It proves that the error term is normally distributed. Functional form of model is well designed and specified. Similarly, there is no existence of white heteroscedisticity and no autoregressive conditional heteroscedisticity as well. Finally step is to analyze the stability of the long-run coefficients together with the short run dynamics. In doing so, the cumulative sum (CUSUM) and the cumulative sum of squares (CUSUMsq) with recursive residual tests are also applied.

It is noted by Pesaran et al., (2001) that stability of the estimated coefficient of the error correction model can also be empirically investigated through application of cumulative sum (CUSUM) and the cumulative sum of squares (CUSUMsq). That's why graphical representation of both CUSUM and CUSUMsq is shown in Figure 1 and Figure 2 (See appendix 1). The graphs of both diagrams are lying with in the critical red-lines. It has been documented by Bahmani-Oskooee and Nasir (2004) that null hypothesis (i.e. that the regression equation is correctly specified) may be accepted if the plot of these statistics remain within the critical bounds at 5% significance level. It can be observed from Figure 1 and 2 that the plots of both the CUSUM and the CUSUMsq are with in the boundaries. These statistics seem to validate the stability of the long run coefficients of forcing variables that affect the financial development in Pakistan.

Conclusions and Policy Implications

There is paucity of empirical literature on the specific relationship between financial development, financial institutions, financial capital openness and trade-openness, and as such, none exists in case of Pakistan. This study investigates the importance of financial institutions, financial openness and trade openness for financial development. Furthermore, the study has examined the hypothesis by Rajan and Zingales (2003), predicts the independent impact of capital account liberalization and trade openness directly. In doing so, we have used three approaches (Johansen test, DOLS and ARDL bounds testing approach) for the robustness of long run relationship among the variables It is found under investigation of three new techniques that results are robust for long run relationship. Coefficient of financial openness has positive impact on financial sector's development. Trade openness is the main promoter of financial development. Financial development is also promoted with qualified financial institutions and economic growth. Inflation declines the efficiency of financial markets. In the last, increase in human capital formation affects the development of financial markets adversely. Furthermore, Rajan and Zingales' hypothesis has also been investigated which predicts combined influence of capital account liberalization and trade openness on financial sector's development. However, such relationship does not exist in case of Pakistan due to low quality of financial markets and mismatched education of academic institutions to adopt the advanced technology in financial markets for the betterment of financial sector.

In terms of policy implications, our findings suggest that, macroeconomic management which could simultaneously stimulate financial openness and trade openness improve the quality of financial institutions and high economic growth in the country would enhance the performance of both capital markets and financial intermediaries. Therefore, there is a need to design appropriate macroeconomic policies generally and for financial markets particularly to obtain the greater benefits from globalization. Finally, there is also need to regulate education sector particularly and to invest in human capital and improve the efficiency of this specific input to achieve technological-based knowledge for the betterment of financial development and, to obtain positive spillovers from the growing phenomenon of globalization.

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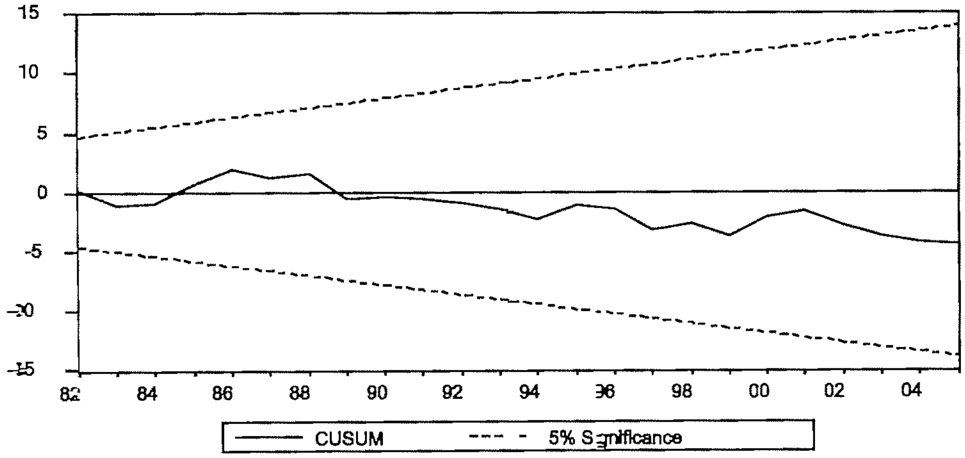
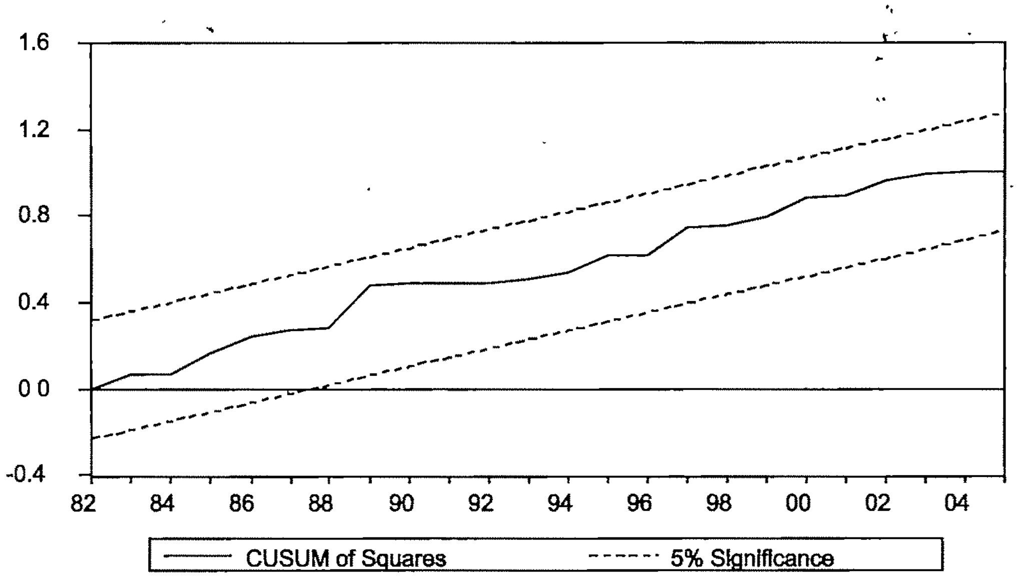
APPENDIX-1



The straight lines represent critical bounds at 5% significance level.

Figure 1: Plot of Cumulative Sum of Recursive Residuals



The straight lines represent critical bounds at 5% significance level.

Figure 2: Plot of Cumulative Sum of Squares of Recursive Residuals

APPENDIX 2

Table 7: DOLS Regression Results

Dependent Variable = LFD

Variable	**Coefficient**	**t-values**	**Prob-values**
Constant	**-16.81**	**-7.45**	0.0000
LGNPC	**0.29**	**3.09**	0.0066
IFL	**-0.11**	**-5.08**	0.0001
LINS	**4.19**	**7.98**	0.0000
LCIF	**0.07**	**3.03**	0.0078
LTR	**0.22**	**2.12**	0.0488
LR	**-0.73**	**-4.95**	0.0001
DLFD	**0.45**	**3.52**	0.0027
DLCIF	**-0.05**	**-2.65**	0.0167
DLGNPC	**0.08**	**1.13**	0.2743
DIFL	**0.04**	**1.98**	0.0644
DIFL(+1)	**-0.03**	**-1.79**	0.0912
DLINS	**-2.64**	**-4.78**	0.0002
DLR	**0.34**	**2.49**	0.0232
DLR	**-0.06**	**-0.58**	0.5666
DLINS(-1)	**-0.91**	**-2.28**	0.0357

R-squared = 0.9781 Adj-R-squared = 0.9588

Durbin-Watson = 1.401 F-stat(prob) = 50.73(0.00)

Diagnostic Tests

Serial Correlation LM Test = 1.970(0.1647)

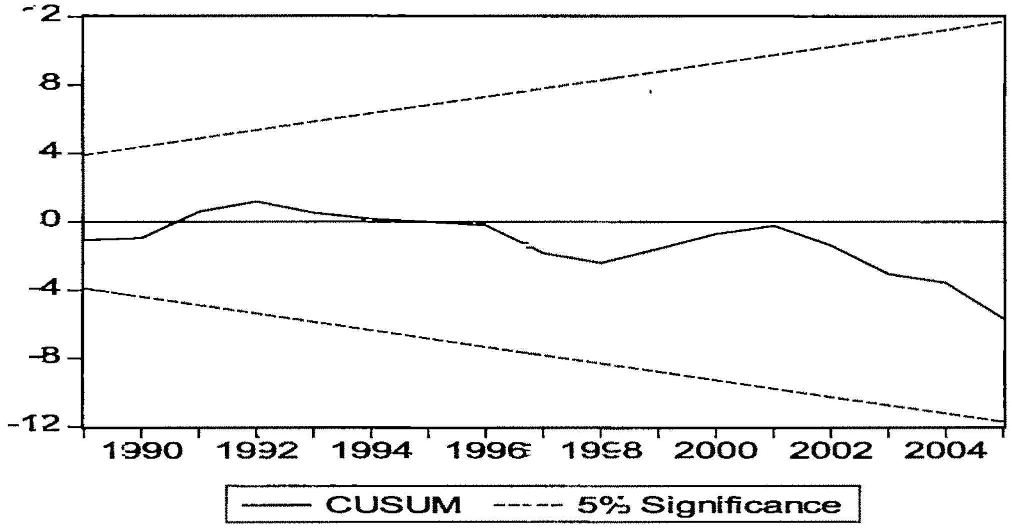
ARCH Test = 0.730 (0.3994)

Heteroskedasticity Test = 1.685(0.3756)

Ramsey RESET Test = 0.599(0.4500)

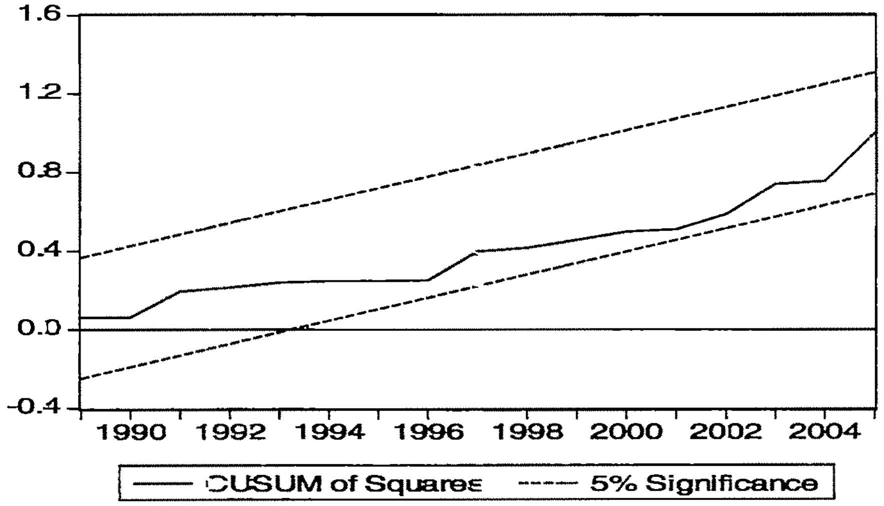
Jarque-Bera Normality test = 0.4973 (0.7798)

APPENDIX 3



The straight lines represent critical bounds at 5% significance level.

Figure 1: Plot of Cumulative Sum of Recursive Residuals



The straight lines represent critical bounds at 5% significance level.

Figure 2: Plot of Cumulative Sum of Squares of Recursive Residuals

Footnote

1. Financial development can influence the extent of international trade in goods and services through two channels: the first operates through risk-sharing and production specialization. The second channel relies on the ability of the financial sector to divert savings to the private

sector. When domestic intermediation is weak and inefficient, firms in export-oriented sectors are burdened by significant liquidity constraints and hence trade less. Financial development can help to overcome these constraints by making more external finance available to domestic firms (Carmignani and Chowdhury, 2005).

2 In an open economy to trade and capital flows, it is more likely to deliver benefits to financial development because openness to trade and finance breeds competition and threaten the interests of incumbents, Law and Demetriades (2004, 2006).

3 International trade brings about substantial changes in competition, technology, price shocks of intermediary and final goods, and in long run even in factor endowments and the institutional feature of a society.

4 Svalery and Vlachos (2000) also found positive association between financial development and liberal trade policies

5 Using stock market for emerging economies. Li. et. al., (2004) find that goods markets openness is associated with greater market wide variations, but not greater firm-specific variations.

6 Recent work by Ju and Wei (2005) and Wynne (2005) also develops connections between financial development and trade specialization.

7 Vlachos and Svaleryd use the industry measure introduced by Rajan and Zingales, which was initially shown to capture how much an industry's growth rate depends on financially development. Hence, Vlachos and Svaleryd essentially establish that some of the faster growth in finance-dependant industries located in financially well-developed countries actually results in higher exports (rather than domestic consumption).

8 Svaleryd and Vlachos (2000) suggest that development of institutions is necessary for risk diversifications, e.g. financial markets, mitigate to reduce barriers to trade. In contrast, Roderick (1998) provides evidence that openness to trade also increases the permanent degree of income volatility in an economy.

9 Inflation rate and literacy rate are not in log form

10 Net private capital inflows consist of private debt and non-debt flows. Private debt flows include commercial bank lending, bonds, and other private credits; non-debt private flows are foreign direct investment and portfolio equity investment. Data is in current U.S dollars. Net private capital inflows consist of private debt and non-debt flows. Private debt flows include commercial bank lending, bonds, and other private credits; non-debt private flows are foreign direct investment and portfolio equity investment. Data is in current U.S dollars.

11 This theoretical formation of ARDL is based on Chandana, (2001)

12 The negative impact of literacy rate on financial sector's development can also be the reason of poor quality of data.

13 For more details see Smith et al. (2001)

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Stock Futures Trading Information and Spot Price Volatility: Evidence from the Indian Pharmaceutical Sector

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Exponential GARCH model was employed to examine the impact of futures trading on spot market volatility of the twelve underlying shares of pharmaceutical sector of India. The empirical analysis was conducted for the daily closing price returns of each stock of pharmaceutical firms for the different time periods from 1st January, 1996 through 12th March, 2009. The analysis reveals mixed findings. Most of the selected pharmaceutical stocks reveal an introduction of futures market declined the volatility of underlying spot market. This is followed by positive impact of introduction of futures on the spot market volatility of the selected underlying shares of pharmaceutical firms in India. Besides, the empirical findings of most of the selected pharmaceutical scrips indicate the existence of positive asymmetric response to new information on the volatility of underlying spot market.

Keywords. *EGARCH Model, Asymmetric Response, Information Pharmaceutical Stocks*

Introduction

The futures market trading in Indian financial markets was introduced in June 2000 and options index was commenced from June 2001 and subsequently the options and futures on individual securities trading was commenced from July 2001 and November 2001, respectively. The derivatives trading on stock indexes and individual stocks have grown rapidly since inception, and in particular, individual stock futures became popular and witness maximum trade volume in futures and options segment at National Stock Exchange (NSE). The futures market trading provides important economic functions such as price discovery, portfolio diversification and opportunity for market participants to hedge against the risk of adverse price movements. Hence, the introduction of futures market makes a significant influence on corresponding spot markets. The movements of the spot market price have been largely influenced by the speculation, hedging, and arbitrage activity of futures markets. Therefore, the debate on the impact of futures trading on spot market volatility has become increasingly important research issue among academicians, regulators and investors alike. This debate provides very useful information for regulators as well as for market participants. Regulators and market participants prefer less volatile market. Financial derivatives are expected to reduce volatility in the spot market as speculators move away from spot market to financial futures market. However, any identifiable regularity such as the introduction of futures is an indication of increasing volatility of the underlying spot market, makes the spot market inefficient. So there is an opportunity for potential extra profits. Regulators and policy makers try to initiate regulations so that the predictability disappears or at least becomes uneconomical (Raju and Karande, 2003). From the point of view of individual investors, the debate will be immensely helpful for the selection of stock for their investments.

From the theoretical point of view, the impacts of futures trading on the volatility of the underlying spot markets are still controversial. One view is that introduction of futures market increases spot market volatility due to the fact that high degree of leverage benefits and low transaction costs in futures market are likely to attract larger uninformed traders. The lower level of information of futures traders with respect to spot market traders is likely to increase the spot market volatility.

Conversely, the introduction of futures trading reduces the spot market volatility because of low cost contingent strategies and high degree of leverage benefits in futures market attracts larger speculative traders from a spot market to a more regulated futures market. This makes the spot market less volatile through reducing the amount of noise trading. The proponents of 'market completion' hypothesis argues

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that derivatives trading helps in price discovery, improve the overall market depth, enhance market efficiency, increase market liquidity and ultimately reduces informational asymmetries and therefore compress spot market volatility.

Review of Literature

The above theoretical discussions result to an existence of substantial amounts of empirical literatures that examined the impact of introduction of the futures trading on underlying spot market volatility. In this area, Finglewski (1981) had examined the impact of futures trading in the Government National Mortgage Association (GMNA) by using the standard deviations of the returns. He concludes that the volatility of the underlying asset is increased after the introduction of futures markets. Edwards (1988) had investigated the impact of stock index futures trading on the underlying spot market. He employed the variance ratio F-tests for the period June 1973 to May 1987. He concluded that introduction of futures trading has not induced a change in spot volatility in the long-run. The analysis also reveals that there is some evidence of futures induced short-run volatility on the expiration days of futures contracts. Harris (1989) examined the volatility effects after introduction of index futures by comparing daily return volatilities during the pre-futures and post futures between S&P 500 and a non S&P 500 group of stock controlling for differences in firm attributes. Variance regression model was employed to examine the objective. The analysis reveals that increased volatility was a common phenomenon in different markets and index futures by themselves might not be a cause.

The study by Chan et al., (1991) estimated the intraday relationship between returns and returns volatility in the stock index and stock index futures. Bivariate GARCH model was employed to examine the objectives. The results indicate a strong inter-market dependence in the volatility of the spot and futures returns. Further, Lee and Olk (1992) investigated the effect of index futures trading on the underlying spot market volatility in Australia, Hong Kong, Japan and UK. The GARCH model has been employed to examine the objective. The analysis reveals that the spot market volatility had increased significantly after the initiation of futures trading in Japan and UK. While in case of Australia and Hong Kong, the result implies that index futures trading have stabilising effect on the corresponding spot markets. Similarly, the study by Antoniou and Holmes (1995) examined the impact of trading in the FTSE-100 stock index futures on the volatility of the underlying spot market. The GARCH family of techniques has been employed to examine the relationship between information and volatility They found that futures trading had increased the volatility of corresponding stock index. Further, the study of Butterworth (2000) for United Kingdom employed the GJR-GARCH and GARCH (1,1) models to examine the issue and finds similar results.

Recent study by Corredor and Rafael (2002) of Spanish stock market employed GJR-GARCH model and found that the onsets of IBEX-35 futures and option contracts have increased the volatility of underlying spot market. Similarly other studies by Pok and Poshakwale (2004) for Malaysia, Ryoo and Smith (2004) for Korea, Zhong, Darrat and Otero (2004) for Mexico and Floros and Vougas (2006) for Greece and Ramana Rao (2007) for India found that inception of futures trading had increased the volatility of underlying spot market.

On the other hand, Bessembinder and Seguin (1992) examined the dynamic relationship between futures trading activity and spot market volatility for United States. The study employed ARIMA model to examine the objective. The analysis reveals that active futures market trading are associated with decreased rather than increased volatility of the spot market by enhancing the liquidity and depth of spot markets. James (1993) investigated the impact of price discovery by futures market on the spot market volatility. He employed Garbade and Siber model to estimate the price discovery function of the futures market. The study results indicates that futures market is beneficial to underlying spot market as it offers better efficiency, liquidity and lowers the long-term volatility of the spot market. Further, Holmes (1996) examined the relationship between futures trading activities and stock market volatility in UK. The GARCH model was employed to examine the objective. The empirical results indicates that inception of futures trading has a beneficial impact on underlying spot market.

Recent study by Bologna and Cavallo (2002) examined the introduction of stock index futures on the volatility of Italian spot market by employing GARCH model. The analysis reveals that futures trading has reduced the volatility of the underlying spot market and enhances the market efficiency. Similarly, other studies by Thenmozhi, 2002; Nath, 2003; Raju and Karande, 2003 and Vipul (2005) for India, Alexakis, 2007; Drimbetas, Sariannidis and Porfiris, 2007 and Karanthanassis and Sogiakas (2007) for Greece and Goodfellow and Salm (2008) for Poland found that the onset of futures trading had decreased the volatility of underlying spot market.

Besides, the earlier studies by Santoni, 1987; Aggarwal, 1988; Fortune, 1989; Becketti and Roberts, 1990 and Baldauf and Santoni (1991) for United States found that there was no significant effect of the introduction of futures trading on the corresponding spot market volatility. The studies of Hodgson and Nicholls (1991) for the Australian spot market and Bacha and Vila (1994) for the Japanese spot market found the similar results. Pericli and Koutomos (1997) examined the impact of US S&P 500 index futures and option contracts on the volatility of underlying spot market. Exponential GARCH model was employed to examine the objective. They found that both index futures and options contracts had no escalating effect on the spot market volatility. Similarly, Dennis and Sim (1999) found that futures trading had no significant impact on spot market activity in Australia. Gulen and Mayhew (2000) examined stock market volatility before and after the introduction of index futures trading in twenty-five countries. The GARCH family of techniques was employed to examine the objective. They found that futures markets have no significant effect on the underlying spot markets in all countries except United States and Japan. Recent study by Illueca and Lafuente (2005) evaluated the intraday relation between spot volatility and trading volume in the Spanish stock index futures market. A bivariate error correction GARCH model was employed to examine the objective. The analysis reveals that there was no significant effect of futures trading on the spot market. Besides, Shenbagaraman (2003) investigated the effect of introduction of derivatives trading on volatility of the underlying spot market from the period 5th October 1995 to 31st December 2002. The univariate GARCH (1,1) model has been employed to examine the objective. The analysis reveals that there is no significant impact of the introduction of derivatives on spot market volatility in India. Similarly, the study of Spyrou (2005) employed the GARCH model to examine the issue and found that the onset of futures trading had no significant effect on the variability of spot market in Greece. Further, the study of Afsal and Mallikarjunappa (2007) examined the impact of futures on spot market volatility of selected scrips of India and finds persistence and clustering of volatility in general and little or no impact of the futures trading on the market volatility in majority of the cases.

The above existing literatures pertaining to impact of futures trading on the underlying spot market volatility are well established. However, the results on the introduction of futures market were seemed to be ambiguous and reveal the following lacunae. Firstly, most of the above studies have adopted stock index futures to evaluate the impact of futures market on the spot market volatility. Therefore, there exists a scope for further analyse by employing the stock futures on individual securities. This will be helpful from the point of view of individual investors for selection of stock for investments. Secondly, most of the earlier literatures employed standard GARCH (p,q) model to investigate the issue which allows the conditional variance of returns is a linear function of lagged conditional variance and past squared error terms (Bollerslev, 1986). The advantage of a GARCH model is that it captures the tendency in financial data for volatility clustering. However, the standard GARCH models assume symmetry in the response of volatility to information. In other words, the models assume that the response of volatility to 'bad' news as well as 'good' news is similar. If the response is asymmetric, then the standard GARCH models become inefficient and provide biased and misleading inferences. Thus, in order to capture the asymmetric response of volatility to news or 'leverage effect', Nelson (1991) proposed Exponential GARCH model which allows the conditional volatility to have asymmetric relation with past data. Another advantage of EGARCH model over the GARCH one is that the variance is always positive even if the parameters values are negative, and thus there is no need for parameter restrictions to impose non-negativity. Hence, in the present study, the impact of futures on the underlying spot market volatility is investigated by employing Exponential GARCH model, which seems to better fit in the distribution of the returns.

On the above background, the present article investigates the introduction of futures trading on the spot market volatility of the selected pharmaceutical firms in India. The rest of the paper is organised as follows. Section – III presents the methodology of the study. Section - IV offers empirical results and discussion. Finally, concluding remarks were presented in Section - V.

Data and Methodology

Exponential Generalised Autoregressive Conditional Heteroscedasticity (EGARCH) model was employed to examine the impact of futures trading on the spot market volatility of selected underlying shares of pharmaceutical sector. The earlier studies such as Lee and Olk, 1992; Antoniou and Holmes, 1995; Holmes, 1996; Kyriacou and Sarno, 1999; Butterworth, 2000; Broad, Sandmann and Sutcliffe, 2001; Rahman, 2001; Bologna and Cavallo, 2002; Pok and Poshakwale, 2004; Ryoo and Smith, 2004; Raju and Karande, 2003; Shenbagaraman, 2003; Nupur and Deb, 2004; Thenmozhi and Thomas, 2004; Sah and Omkarnath, 2005; Sarangi and Patnaik, 2006; Mallikarjunappa and Afsal (2007) and others, employed the standard GARCH (p,q) model that was introduced by Bollerslev (1986), suggests the conditional variance of returns is not only depends on the squared residuals of the mean equation but also on its own past values. The standard GARCH model captures the volatility clustering of financial time series. Hence, by using an appropriate GARCH model, while controlling for time-varying property of volatility, one can estimate the changes in the information flows, i.e., the impact of recent and old news on volatility. However, the standard GARCH model is associated with the shortcoming that it assumes a symmetric response to news. In the presence of an asymmetric response to news, whereby a negative shock to financial time series is likely to cause volatility to rise by more than a positive shock of the same magnitude, the standard GARCH model would be biased leading to misleading inferences regarding the relationship between information and volatility. Thus, in order to capture the asymmetric response of volatility to news or 'leverage effect', Nelson (1991) proposed Exponential GARCH model which allows the conditional volatility to have asymmetric relation with past data.

The Exponential GARCH model captures asymmetric features of return series. Statistically, this effect occurs when an unexpected drop in stock price due to bad news increases volatility more than an unexpected increase in price due to good news of similar magnitude. This model expresses the conditional variance of a given variable as a non-linear function of its own past values of standardised innovations that can react asymmetrically to good and bad news (Drimbetas, Sariannidis and Porfiris, 2007). Specifically, Log likelihood ratio tests on an EGARCH model for p, q $\in \{1, 2 \ldots\ldots 5\}$ are employed in order to find the most parsimonious EGARCH representation of the conditional variance of returns[1]. The EGARCH (1,1) model can be specified as follows:

$$R_t = \beta_0 + \beta_1 R_{t-1} + \beta_2 R_t^{NIFTY} + \varepsilon_t \text{ .... (1)}$$

$$ln(\sigma^2_t) = \alpha_0 + \alpha_1 ln(\sigma^2_{t-1}) + \delta_1 \left| \frac{\varepsilon_{t-1}}{\sigma_{t-1}} \right| + \gamma_1 \frac{\varepsilon_{t-1}}{\sigma_{t-1}} + \alpha_2 \, FDUM \text{ .... (2)}$$

where, R_t is the daily spot returns of the each individual pharmaceutical stocks at time 't'. R_{t-1} is a proxy for the mean of R_t conditional on past information. R_t^{NIFTY} is daily returns of the S&P CNX Nifty index, a proxy variable to capture 'market wide' volatility. In the variance equation *(2)*, ln represents the logarithmic function. σ^2_t denotes the conditional variance of the current time period 't'. σ^2_{t-1} denotes the estimation of the variance of the previous time period 't-1' that stands for the linkage between current and past volatility. In other words, it measures the degree of volatility persistence of conditional variance in the previous period. $\left| \frac{\varepsilon_{t-1}}{\sigma_{t-1}} \right|$: represents information concerning the volatility of the previous time period.

It signifies the magnitude impact (size effect) coming from the unexpected shocks. $\frac{\varepsilon_{t-1}}{\sigma_{t-1}}$: indicates information concerning the leverage ($\gamma_1 > 0$) and the asymmetry ($\gamma_1 \neq 0$) effects. α's, β's, δ, and γ are the constant parameters to be estimated. ε_t represents the innovations distributed as a Generalised error distribution (GED), a special case of which is the normal distribution (Nelson, 1991). FDUM is the dummy variable that measures the introduction of futures market. The dummy variable 'FDUM' takes 'zero' value for the pre-futures period and 'one' for the post-futures period.

As far as database was concerned, the study attempts to analyse daily returns on twelve selected underlying stocks of pharmaceutical sector, on which derivative trading has commenced upto the benchmark of May 2003. Only those companies with a minimum of one year and above of data prior to introduction of derivatives trading on the underlying shares have been included in the analysis. The twelve pharmaceutical firms were identified based on above criteria and analysed (List of pharmaceutical firms and its description given in Appendix-I). The study analyses daily closing price returns of each stock for the different time periods from 1st January, 1996 through 12th May, 2009. This is mainly due to non-availability of database prior to 1st January, 1996 for the most of the selected pharmaceutical stocks in India. To address the issue of whether introduction of futures market has been alone responsible in reducing volatility, the study incorporated the daily returns from surrogate index, S&P Nifty Index into mean equation of EGARCH model of respective stocks to control the market pervasive factors influencing the spot market volatility following Kamara, Miller and Seigel, 1992; Antoniu and Holmes, 1995; Bologna and Cavallo, 2002; and Nair (2008). The daily returns of S&P Nifty Index was used for the time frame for which the scrip is being analysed in order to map the effect of market pervasive factors that affect the volatility of stock returns. The daily data on closing stock prices on the scrips as well as Nifty Index was obtained from the National Stock Exchange website, Mumbai.

Results and Discussions

Table 1 presents the result of descriptive statistics of spot returns of selected stocks of pharmaceutical firms. The table result depicts that the standard deviations of all selected pharmaceutical stocks were ranges between 0.0224 and 0.0758 which indicates that the volatility nature of the stocks was found to be higher Further, the table result reveals that the skewness statistics of all stocks are significantly different from zero i.e. they are skewed either to the right or to the left. Also, the excess kurtosis values of all return series of selected stocks are fat-tailed or leptokurtic compared to the normal distribution. In addition, the Jarque-Bera test statistics indicate that the null hypothesis of normality of return series of all selected pharmaceutical stocks had been rejected at one per cent significance level. Hence, it can be concluded that the return series of all selected stocks were significantly departures from normality. Further, to test the presence of autocorrelation, the Table 1 report the Q-statistics of Ljung-Box test for the standardised residuals and squared standardised residuals conducted up to 12 and 24 lags. The tests result suggests that the squared residuals are autocorrelated in case of all selected pharmaceutical stocks, thus confirming the presence of ARCH effects in the time series analysed.

Augmented Dickey Fuller and Phillips-Perron tests were employed to test the stationarity of spot return series of selected pharmaceutical stocks and its results are presented in Table 2. The table result reveals that the hypothesis of a unit root in the return series of selected pharmaceutical stocks is strongly rejected by both the tests. Therefore, returns follow a stationary process even though they fail to be normally distributed because of the presence of ARCH effects. In summary, the spot return series of all selected stocks seems best described by an unconditional leptokurtic distribution and possesses significant conditional heteroscedascity. Hence, the EGARCH model is capable with generalised error distribution (GED) is deemed fit for modeling the spot return volatility. Further, the EGARCH model is capable of capturing, at least partially, the leptokurtosis of a non-conditional return distribution of an economic element as well as the valuable information about the dependence in the squared values of return (Engle and Ng, 1993).

So, the study employed the EGARCH model to investigate the impact of onset of futures market on spot market volatility of selected stocks of pharmaceutical firms in India and its results are presented in Table 3a and Table 3b. The mean equation results of EGARCH (1,1) model in Table-3a reveals that spot returns of most of the selected pharmaceutical stocks exhibits significant autocorrelation at lag one of the time series. The estimated β_2 for most of the stocks are significantly different from zero indicating that it captures market-wide volatility.

Table 1: Summary Statistics of Spot Returns of the Selected Pharmaceutical Firms

Name of the Stocks	Mean	Standard Deviation	Skewness	Kurtosis	Jarque-Bera statistics	L-B for standarised Residual		L-B for Squared Residual	
						Q(12)	Q(24)	$Q^2(12)$	$Q^2(24)$
AUROPHARMA	-0.0001	0.0387	3.664	62.40	481803.2*	270.48*	391.93*	273.20*	395.41*
CIPLA	0.0001	0.0440	20.85	660.99	59697451*	45.007*	45.058*	43.595*	43.652*
DABUR	0.0002	0.0494	29.44	1300.67	2.32E+08*	38.476*	38.736*	38.476*	45.831*
DIVISLAB	-0.0010	0.0514	19.61	609.47	23084449*	41.406*	41.436*	198.85*	198.90*
DRREDDY	-0.0001	0.0317	6.482	146.24	2841112*	42.112*	42.222*	42.098*	42.239*
GLAXO	-0.0005	0.0224	-0.178	5.813	1104.1*	206.78*	299.13*	204.17*	293.02*
MATRIXLABS	0.0023	0.0758	24.29	742.38	26926593*	149.17*	219.40*	164.32*	239.82*
ORCHIDCHEM	7.94E-05	0.0424	9.786	283.59	9800665*	51.849*	91.326*	47.800*	76.912*
RANBAXY	0.0004	0.0316	7.440	155.86	3239735*	28.260*	28.411*	21.502*	21.503*
STAR	0.0014	0.0418	-0.207	7.478	1539.9*	96.401*	99.234*	144.51*	148.10*
SUNPHARMA	-0.0004	0.0376	11.60	313.28	13284083*	158.43*	171.25*	118.11*	153.79*
WOCKPHARMA	0.0010	0.0324	13.78	434.86	17642439*	194.91*	262.24*	213.28*	268.11*

Notes: * denote the significance at one per cent level. L-B stands for Ljung-Box Q statistics for Standardized Residuals and Squared Standardized Residuals respectively. They test for existence of autocorrelation in Standardized and Squared Standardized Residuals up to 12 and 24 lags respectively. L-Jung-Box test statistic tests the null hypothesis of absence of autocorrelation.

Table 2: Unit Root Tests for Spot Returns of Selected Pharmaceutical Firms

Name of the Stocks	Augmented Dickey-Fuller Test Statistics			Phillips-Perron Test Statistics		
	Intercept	With Intercept & Trend	Without Intercept & Trend	Intercept	With Intercept & Trend	Without Intercept & Trend
AUROPHARMA	-23.90*	-23.94*	-23.91*	-50.32*	-50.37*	-50.34*
CIPLA	-30.74*	-30.77*	-30.73*	-55.04*	-55.05*	-55.06*
DABUR	-28.08*	-29.00*	-29.02*	-57.18*	-57.17*	-57.19*
DIVISLAB	-21.34*	-21.46*	-21.33*	-37.42*	-37.52*	-37.40*
DRREDDY	-25.62*	-25.69*	-25.60*	-55.88*	-55.91*	-55.80*
GLAXO	-28.80*	-28.86*	-28.82*	-55.59*	-55.55*	-55.53*
MATRIXLABS	-19.33*	-19.39*	-19.35*	-33.53*	-33.56*	-33.55*
ORCHIDCHEM	-29.48*	-29.52*	-29.50*	-48.58*	-48.62*	-48.60*
RANBAXY	-39.17*	-39.19*	-39.16*	-53.35*	-53.37*	-53.31*
STAR	-21.36*	-21.35*	-21.31*	-40.26*	-40.24*	-40.21*
SUNPHARMA	-25.90*	-25.93*	-25.95*	-54.46*	-54.45*	-54.43*
WOCKPHARMA	-21.69*	-21.73*	-21.63*	-46.74*	-46.76*	-46.70*

Notes: * – indicates significance at one per cent level. Optimal lag length is determined by the Schwarz Information Criterion (SC) and Newey-West criterion for the Augmented Dickey-Fuller Test and Phillips-Perron Test respectively.

Table 3a: Mean Equation Results of EGARCH model for the Underlying Shares of the Pharmaceutical Firms

$$R_t = \beta_0 + \beta_1 R_{t-1} + \beta_2 R_t^{NIFTY} + \varepsilon_t$$

Name of the Stocks	β_0	β_1	β_2
AUROPHARMA	-0.002 (-0.473)	0.117* (6.685)	0.0003 (0.518)
CIPLA	-0.055* (-15.32)	0.293* (19.30)	0.009* (16.41)
DABUR	-0.015 (-0.973)	-0.001 (-0.512)	0.061* (2.842)
DIVISLAB	-0.053* (-3.541)	0.019** (1.991)	0.007* (3.369)
DRREDDY	0.003 (0.477)	0.041** (1.980)	-0.0006 (-0.640)
GLAXO	0.001 (0.238)	0.026 (1.474)	-0.092** (-1.992)
MATRIXLABS	0.004 (0.250)	-0.048** (-1.968)	-0.0006 (-0.283)
ORCHIDCHEM	0.015** (2.310)	0.084* (3.509)	-0.002** (-2.495)
RANBAXY	0.023* (4.630)	0.028** (2.112)	-0.004* (-4.749)
STAR	-0.007 (-0.649)	0.017** (2.120)	0.001 (0.745)
SUNPHARMA	-0.004 (-1.038)	-0.117* (-8.681)	0.0706* (4.130)
WOCKPHARMA	0.002** (1.978)	0.214* (12.18)	-0.001** (-2.032)

Notes: Figures in parenthesis are z-statistics, * (**) denote the significance at the one and five per cent level, respectively.

Furthermore, the variance equation results of the EGARCH (1,1) model for the selected pharmaceutical stocks are presented in Table 3b.

Table 3b: Variance Equation Results of EGARCH model for the Underlying Shares of the Pharmaceutical Firms

$$\ln(\sigma_t^2) = \alpha_0 + \alpha_1 \ln(\sigma_{t-1}^2) + \delta_1 \left| \frac{\varepsilon_{t-1}}{\sigma_{t-1}} \right| + \gamma_1 \frac{\varepsilon_{t-1}}{\sigma_{t-1}} + \alpha_2 FDUM$$

Name of the Stocks	α_0	α_1	δ_1	γ_1	α_2
AUROPHARMA	-0.590* (-15.39)	0.947* (186.88)	0.345* (33.30)	0.079* (8.629)	-0.025* (-4.603)
CIPLA	-7.789* (-148.86)	0.011 (1.457)	1.532* (67.24)	0.316* (12.15)	0.954* (23.65)

DABUR	-5.967* (-8.589)	0.011 (0.104)	-0.252* (-10.41)	-0.028** (-1.986)	-0.114* (-5.547)
DIVISLAB	-6.216* (-4.059)	0.053 (0.234)	-0.228* (-6.613)	0.123* (4.614)	0.536* (3.799)
DRREDDY	-8.080* (-17.61)	-0.198* (-2.905)	0.224* (7.015)	0.118* (5.136)	-0.700* (-17.84)
GLAXO	-0.896* (-12.20)	0.907* (104.20)	0.274* (15.48)	0.027** (2.411)	-0.050* (-5.571)
MATRIXLABS	-0.084* (-8.452)	0.978* (389.80)	0.145* (12.45)	0.038* (4.309)	-0.173* (-13.84)
ORCHIDCHEM	-1.974* (-17.73)	0.866* (52.08)	0.609* (20.20)	0.192* (11.17)	0.081* (5.565)
RANBAXY	-5.414* (-20.19)	0.307* (8.374)	0.656* (28.80)	-0.138* (-6.472)	0.387* (13.30)
STAR	-0.524* (-9.419)	0.941* (112.94)	0.213* (13.27)	0.063* (7.233)	-0.032* (-3.597)
SUNPHARMA	-7.826* (-136.26)	-0.059* (-6.224)	1.205* (50.06)	0.215* (9.436)	-0.949* (-21.52)
WOCKPHARMA	-5.854* (-33.98)	0.290* (12.95)	1.021* (32.09)	-0.521* (-34.28)	-0.025* (2.758)

Notes: Figures in parenthesis are z-statistics, * (**) denote the significance at the one and five per cent level, respectively.

By and large, the Table 3b result reveals that most of the selected pharmaceutical stocks viz., AUROPHARMA, CIPLA, DIVISLAB, DRREDDY, GLAXO, MATRIXLABS, ORCHIDCHEM, STAR and SUNPHARMA are having significant positive asymmetric effects at one or five percent levels. This result indicates a size effect of news which is stronger for good news than for bad news. Hence, there is a larger impact on volatility due to the noise traders during market upward movement than market downward movement under the same magnitude of innovation, i.e. the volatility of positive innovations is larger than that of negative innovations. However, the results of rest of the pharmaceutical stocks, viz., DABUR, RANBAXY and WOCKPHARMA exhibit significant negative asymmetric effects in the response of volatility to information.

Besides, the statistically significant coefficients‘ α_1 ’ of selected stocks, viz. AUROPHARMA, GLAXO, MATRIXLABS, ORCHIDCHEM and STAR are close to unity which implies that volatility shocks are quite persistent and takes longer time to dissipate.

In Table-3b, the impact of introduction of futures trading on the spot market volatility of selected underlying shares of pharmaceutical firms are examined with inclusion of dummy variable ‘FDUM’ in the variance equation. The table results reveal mixed findings. Most of the selected pharmaceutical stocks, viz., AUROPHARMA, DABUR, DRREDDY, GLAXO, MATRIXLABS, STAR, SUNPHARMA and WOCKPHARMA reveal an introduction of futures market decreased the volatility of underlying spot market in India. This is followed by the positive impact of introduction of futures on the spot market volatility in case of other selected pharmaceutical stocks viz., CIPLA, DIVISLAB, ORCHIDCHEM and RANBAXY. The present study suggests that the mixed findings may be due to the fact that selected underlying shares of pharmaceutical firms are widely dispersed in terms of its firm-specific activities. Hence the variations in the evidence of the underlying stocks are subject towards the firm-specific information that disseminates in the market place.

Conclusion

Exponential GARCH model was employed to examine the impact of futures trading on spot market volatility of the twelve underlying shares of pharmaceutical sector of India. The empirical analysis was conducted for the daily closing price returns of each stock of pharmaceutical firms for the different time periods from 1st January, 1996 through 12th March, 2009. The analysis reveals mixed findings. Most of the selected pharmaceutical stocks reveal an introduction of futures market declined the volatility of underlying spot market. This is followed by positive impact of introduction of futures on the spot market volatility of the selected shares of pharmaceutical firms in India. Besides, the empirical findings for most of the selected pharmaceutical scrips indicate the existence of positive asymmetric response to new information on the volatility of underlying spot market.

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Appendix 1

Brief Descriptions of Database on Individual Stocks of Selected Pharmaceutical Firms considered for the Study

S. No.	NSE code/ Name of the Stocks	Name of the Firms	Time period of Spot Return selected for Individual stocks	Date of Introduction of Futures on Individual stocks
1.	AUROPHARMA	Aurobindo Pharma Ltd.	15-01-1996 To 12-03-2009	12-05-2005
2	CIPLA	Cipla Ltd.	01-01-1996 To 12-03-2009	09-11-2001
3	DABUR	Dabur India Ltd.	01-01-1996 To 12-03-2009	20-04-2005
4	DIVISLAB	Divi's Laboratories Ltd.	12-03-2003 To 12-03-2009	12-05-2005
5.	DRREDDY	Dr. Reddy's Laboratories Ltd.	01-01-1996 To 12-03-2009	09-11-2001
6	GLAXO	Glaxosmithkline Pharma Ltd	01-01-1996 To 12-03-2009	20-04-2005
7	MATRIXLABS	Matrix Laboratories Ltd.	22-06-2004 To 12-03-2009	20-04-2005
8.	ORCHIDCHEM	Orchid Chemicals Ltd.	02-01-1996 To 12-03-2009	12-05-2005
9.	RANBAXY	Ranbaxy Laboratories Ltd.	01-01-1996 To 12-03-2009	09-11-2001
10.	STAR	Strides Arcolab Ltd.	02-02-2000 To 12-03-2009	27-05-2005
11	SUNPHARMA	Sun Pharmaceuticals India Ltd.	01-01-1996 To 12-03-2009	20-04-2005
12.	WOCKPHARMA	Wockhardt Ltd.	23-02-2000 To 12-03-2009	20-04-2005

Footnote

1. Financial development can influence the extent of international trade in goods and services through two channels: the first operates through risk-sharing and production specialization. The second channel relies on the ability of the financial sector to divert savings to the private sector. When domestic intermediation is weak and inefficient, firms in export-oriented sectors are burdened by significant liquidity constraints and hence trade less. Financial development can help to overcome these constraints by making

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Comparative Study of Conditional Volatility of Indian and US Stock Markets Using Garch (1, 1) Model

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Change is the most eternal phenomenon An economy is sustainable only when it withstands the change and takes the change into its own stride Indian economy has four such major changes in last two decades This study is an attempt to find out how Indian securities market has faced these changes Volatility is one of the best measures to study the impact of change on the securities market We have used time-varying variance based GARCH process to capture the change in the volatility and study its impact on the Indian securities market Further, change in the volatility of US securities market has been compared with change in volatility of Indian securities market at different time of uproar in the Indian Economy It has been found that co-movement in terms of conditional volatility in both the market is not prominent

Keywords: *ARCH[1], Derivatives[2], Stock market, Reforms, Security Depositories[1]*

Introduction

In Indian stock market there had been four major upheavals in last 20 years. The first major change was introduced by the economic reforms in India in early 1990s. Passing of SEBI Act in 1992 was part of this so that the office of Capital Controller of India was abolished to bring regulation in the primary as well as secondary market. The second upheaval was seen when depository act was passed in 1996 to gradually phase out physical form of security so that securities would be transacted in the demat form. The third period of upheaval was introduction of derivatives in India in early 2000s. The fourth major change was seen during the financial turmoil of early 2008 when some major financial institution of US saw their fate doomed and they either became bankrupt of had no choice but to become liability on the government for their survival. This period started with sub-prime mortgage crisis that resulted into a country wide problem which finally percolated to other parts of the world too.

Indian stock market and especially Indian capital market is still in developing stage as compared to developed capital markets like US. During these four above mentioned periods.

US stock market did not have as such any upheaval except for the fourth period under study. In this study we have compared the Indian stock market with US stock market during these four periods. US market has been taken to rule out possibility of spillover effect from US market to Indian market. Indian stock market has been studied for these four periods then this has been compared with the US stock market to know the possibility of co-movements between Indian and US stock markets. This comparison made in the study is to understand whether changes in the Indian Stock market are its own or because of the influence from US stock market and how future behavior of Indian market can be predicted in a better way.

Literature Review

A financial time series has three different things different from a normal time series.

- Leptokurtic distribution of the series of the return of financial assets
- Volatility clustering
- Leverage effect

Therefore a financial time series can not be modeled in the normal way. To model such time series a time varying volatility models is required. Engel (1982) first time proposed to incorporate time varying nature

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of volatility using ARCH Process. The work of Engle (1982) was made better by Bollerslev (1986), who incorporated GARCH models to overcome some of the lacunae of ARCH models like overfitting and breach of non-negativity constraint. Many researchers have found GARCH family of models to outperform other models. Different researchers used different markets and different methods to communicate the same thing in following research papers:

On US-based data

- Akgiray (1989)
- Pagan and Schwert (1990)
- Brailsford and Faff (1996)
- Brooks (1998)

On Europe based data

- Corhay and Rad (1994)

On Asian Countries based data

- Andersen and Bollerslev (1998)

All the researchers found that GARCH family of models provide more accurate forecast of volatility of returns of the financial assets. Out of aforesaid three special features of financial time series data (leptokurtic distribution, volatility clustering and leverage effect) the leptokurtic and volatility clustering nature of the financial return data has been captured by GARCH models but asymmetric behavior has not been captured To solve the issue Nelson (1991), Zakoian (1994) and GJR (1993) proposed EGARCH, TARCH and GJR models respectively which can capture tendencies of asymmetric nature of financial data (Engle and Victor, 1993)

Objective

This study has following objectives.

- To model the conditional volatility of the Indian stock market and US stock market during four periods of upheavals under study.
- Comparing the behavior of Indian stock market and US stock market during four periods under study.
- Giving suggestions for future behavior of Indian stock market based on the findings of the behavior of Indian stock market viz-a-viz US stock market.

Data and Methodology

Linear structural models are unable to explain a number of important features common to financial data including leptokurtosis, volatility clustering and leverage effect. There are an infinite number of different types of non-linear models. However, only a small number of non-linear models have been found to be useful for modeling the financial data. The most popular non-linear financial models are the ARCH or GARCH models used for modeling and forecasting volatility. The ARCH models have been useful for modeling volatility. ARCH models explained leptokurtic and volatility clustering behavior of the financial data but have several limitations like violating the principal of parsimony and non-negativity. These problems were removed by GARCH models which are an extension over the ARCH models. The GARCH models were developed independently by Bollerslev (1986). The simplest but often useful GARCH process is the GARCH (1, 1) process which is also called the generic or vanilla GARCH model. We have used GARCH (1, 1) model because of simplicity. Though, it does not take care of leverage effect present in financial data and sometime violation of non-negativity constraint is also found. These could have been taken care by many extensions of GARCH model (like EGARCH, TGARCH etc.) which covers asymmetrical models. But GARCH (1,1) model is found to be an excellent model for a wide range of financial data (Bollerslev et al., 1996) and we have found that this suffices our purpose of comparison of conditional volatility during four period taken for study.

Let R_t be the rate of return of any stock or portfolio from time t-1 to t using log differences and I_{t-1} be the information set at time t-1, then the conditional mean equation will be

$$R_t = E(R_t|I_t) + \epsilon_t \text{ or}$$

$$R_t = \pi_t + \epsilon_t \quad (1)$$

Where

$E(R_t|I_t)$= Conditional expected value of R_t which is equal to m

ε_t= the error term at time 't'

Engel (1982) put forth that the conditional variance h_t can be modeled as a function of the lagged ε_s. The most developed model made by him is ARCH (q) model.

$$h_t = \omega + \alpha_1\epsilon_{t-1}^2 + \alpha_2\epsilon_{t-2}^2 \ldots\ldots\ldots + \alpha_q\epsilon_{t-q}^2 \qquad (2)$$

Bollerslev (1986) generalized the ARCH (q) models to the GARCH (p,q) models

$$h_t = \omega + \alpha_1\epsilon_{t-1}^2 + \alpha_2\epsilon_{t-2}^2 \ldots\ldots\ldots + \alpha_q\epsilon_{t-q}^2 + \beta_1 h_{t-1} + \beta_2 h_{t-2} + \ldots\ldots\ldots + \beta_p h_{t-p} \qquad (3)$$

Where ω >0, $\alpha_1, \alpha_2 \quad \alpha_q \geq 0, \quad \beta_1, \beta_2 \quad \beta_p \geq 0$.

The GARCH (p,q) process is defined above is stationary when

$$(\alpha_1 + \alpha_1 + \ldots\ldots\ldots \alpha_q) + (\beta_1 + \beta_1 + \ldots\ldots\ldots + \beta_1) < 1.$$

The same equation for GARCH(1,1) is

$$h_t = \omega + \alpha_1\epsilon_{t-1}^2 + \beta_1 h_{t-1} \qquad (4)$$

Where ω >0, $\alpha_1 \geq 0$, $\beta_1 \geq 0$ and the stationary condition for GARCH (1,1) is $\alpha_1 + \beta_1 < 1$

Before we come to GARCH model we test the time series of all the four periods taken for study for ARCH effect. The four time periods taken for study are as follows.

SN			India	US
1	Economic Reforms in India	January 1991 to December 1993 And January 1994 to December 1996	BSE Sensex values for both the periods	Dow Jones Industrial Average Index for both the periods
2	Introduction of Security Depository System in India	January 1997 to December 1999 And January 2000 to December 2002	BSE Sensex values for both the periods	Dow Jones Industrial Average Index for both the periods
3	Introduction of Derivatives in India	January 1999 to December 2001 And January 2002 to December 2004	BSE Sensex values for both the periods	Dow Jones Industrial Average Index for both the periods
4	Sub-prime mortgage crisis in USA	January 2005 to December 2007 And January 2008 to March 2010	BSE SENSEX values for both the periods	Dow Jones Industrial Average Index for both the periods

All the four time periods have been divided into two sets of data. One set of data of every time period belongs to time period before the change and the second set of data belongs to the time period after the change.

Economic reform started in India in early 1990s. It took a shape only after 1993. Therefore, we have assumed that the period before economic reform is the period before December 1993. The depository system was started in India after the enactment of depository act and making of NSDL in 1996 which was followed by coming up of CDSL in 1999. The whole system of demat securities and trading took some time before it came to full force. Therefore, the period before depository has been taken as from January 1997 to December 1999. Derivative was also introduced in India in phases starting from June 2000. Therefore we have assumed that the period before the introduction of derivatives in Indian will be January 1999 to December 2001. The sub-prime mortgage crisis took its full shape in January 2008 with the plummeting of stock indices across the world followed by fall of many financial behemoths in US. Therefore the period before sub-prime mortgage crisis has been taken form January 2005 to December 2007. BSE SENSEX index data has been taken for India and Dow Jones Industrial Average index data has been taken for US.

The methodology for study in this paper follows following steps.

Step 1

To cover all the four periods by BSE SENSEX and Dow Jones (two sets in every time period) altogether we have 16 time series and first of all we have tested every time series for ARCH Effect so that we can fit in GARCH (1,1) model.

Step 2

Fitting the GARCH (1, 1) mode for all the 16 time series

Step 3

Taking the Specifications from the each fitted GARCH (1, 1) model

Step 4

In this step of diagnostic testing of the fitted model it is examined how well the GARCH (1, 1) model fits in. Following are the things for examining the GARCH model:

1. The standardized residual should have zero mean and unit variance
2. The distribution of standardized residual should be independently and identically distributed.

To do these things we have calculated mean, variance and compute the Ljung-Box (Q) statistics to test the autocorrelation.

Step 5

The fifth step is comparison of the Indian stock market with US stock market during all the four periods under study. Comparison is done using specification of parameters of the fitted model. The values of parameters α_1 and β (equation 4) determine the short run dynamics of the resulting volatility time series. Volatility is persistent if GARCH lag coefficient β_1 is large and it indicates that shocks to conditional variance take a long time to die out. Large GARCH error coefficient α_1 means that volatility reacts quite intensely to market movements. A high value of $(\alpha_1+\beta_1)$ implies a lasting effect. If $(\alpha_1+\beta_1)$ is close to unity, then a 'shock' at any point will continue for longer periods.

The data for the study has been collected from CMIE's PROWESS and Yahoo Finance. There are altogether 8 set of time series data, that has been collected (A set comprised of 2 time series); four set of data for BSE SENSEX for aforesaid four periods and four set of data for Dow Jones again for the same periods. Difference of natural logs has been calculated for returns of the indices for all the sixteen time series of the study.

Empirical Results

ARCH Effect

All the time series (sixteen) have been tested for ARCH effect before they are being modeled by GARCH models. All the eight time series of study of Indian market has shown significant ARCH effect. Out of eight time series only one time series of Dow Jones Industrial Average for Jan 1991 to Dec 1993 period does not show ARCH effect which reflects relatively calm period in USA in the stock market (Table 1).

Table 1: Testing of ARCH effect

SN	Particular		BSE	Dow Jones
1	Residual Test ARCH-LM Test	Jan 1991-Dec 1993	1 69*	0.39**
		Jan 1994-Dec 1996	6 02*	2.27*
2	Residual Test ARCH-LM Test	Jan 1997-Dec 1999	3 46*	8.02*
		Jan 2000-Dec 2002	13.94*	9 12*
3.	Residual Test ARCH-LM Test	Jan 1999-Dec 2001	7 61*	4.6054*
		Jan 2002-Dec 2004	32.51*	28.32*
4	Residual Test ARCH-LM Test	Jan 2005-Dec 2007	15.43*	10 72*
		Jan 2008-Mar 2010	4.64*	20.04*

*Null of No ARCH is rejected or ARCH effect is significant at 5% level of significance

** ARCH effect is not significant

Economic Reforms in India

The first set of data is of 'Economic Reforms in India'. Before this change Indian market has witnessed tranquility in terms of consistency of volatility as α and β have .11 and .88 values respectively which can be interpreted as not much intensity in responding to market movements and persistence of conditional volatility. In comparison of USA, nothing can be said as ARCH effect has not been found in the time series data for the period. But after this point in India the volatility has been increased as α and β both have taken reverse trend and their values have become .13 and .79 respectively which indicates spiky volatility and frequent changes which do not last long. On the contrary in US for the same period though the reaction to market movements are intense but because β is .85 it can be interpreted as more persistent in those changes. This can be interpreted as Economic Reforms have made the Indian market more volatile and uncertain.

Introduction of Security Depository System in India

Before the introduction of depository system the reaction to change in volatility of market and resistance was low as α of this period is .13 and β is also relatively low at .68. Both have witnessed a rise in values from .13 to .17 in case of α and .68 to .78 in case of β which are the testimony of the fact that the market volatility has become more reactive to change and relatively more persistence in the performance. This can be interpreted that introduction of depository has made Indian stock market vibrant. In USA during the same period (Jan 2000 to Dec 2002) no significant change has been witnessed as α and β values are almost same as has been for the previous duration (Jan 1997-Dec 1999). In US the values of α and β were .089 and .83 respectively which is .107 and .86 respectively during the latter period of second upheaval of Indian stock market. This trend of no major changes in the US stock market with only a minor change in α, shows a slight increase in the reactive tendencies in the US stock market (Table 2).

Introduction of Derivatives in India

After the introduction of the derivatives in India the market has not responded much as α has slightly fallen down from .18 to .17 whereas the persistence has increased clearly. The value of β has gone up from .70 to .75. Comparison with the US market for the same period has nothing in common. In US the market has moved less reactive as α has gone down significantly from .08 to .06 and US market witnessed high level of persistence as β has increased considerably from .87 to .93. US market became relatively dull. However, Indian market has also become dull but US market has high degree of change and Indian market has shown relatively low level of change towards dullness (Table 2). A co-movement possibility between Indian stock market and US stock market is witnessed for the persistency of volatility in the market because β of both the markets has moved up. But Indian market remained lower than .8 value for β whereas, US market became more persistent as β turned from . 87 to .93 which in both the conditions remained more than .8 ($\beta \geq .8$ is common for financial markets Karmakar, 2005).

Table 2: Coefficient of GARCH (1, 1) Model

SN	Particular	Time Period	Coeff.	BSE	Dow Jones
1.	Economic Reforms in India	Jan 1991- Dec 1993	M	.0012	No ARCH effect
			A	.110911*	
			B	. 878404*	
			Ω	.0000135	
		Jan 1994-Dec 1996	M	-.0002	.000840
			α	.1411*	.066282
			β	.7951*	.845058
			ω	.0000132	.00000406

2.	Introduction of Security Depository System in India	Jan 1997-Dec 1999	m	.000998	-.00112
			α	.131060	.089588
			β	.67869	.830738
			ω	.0000611	.0000104
		Jan 2000-Dec 2002	m	.000267	-.000212
			α	.169911	.106891
			β	.779568	.857787
			ω	.0000151	.00000757
3.	Introduction of Derivatives in India	Jan 1999-Dec 2001	m	.000775	.0007
			α	.1765	.081524
			β	.7038	.872676
			ω	.0000453	.00000706
		Jan 2002-Dec 2004	m	.001286	.000416
			α	.16546	.062668
			β	.754425	.932952
			ω	.0000129	.000000535
4.	Sub-prime mortgage crisis in USA	Jan 2005- Dec 2007	m	.002041	.000423
			α	.122493	.054064
			β	.82728	.917173
			ω	.00000975	.00000158
		Jan 2008-Mar 2010	m	.000716	.000586
			α	.159813	.109117
			β	.850161	.890553
			ω	.00000494	.00000128

* Significant at 5% level of significance

Sub-Prime Mortgage Crisis

Before sub-prime mortgage crisis in US (before Jan 2008), Indian stock market was at its boom and it witnessed high-level of persistence and lasting change. After this period β, has gone up from .83 to .85. The reactive measure α has also increased from .12 to .15 which implies that increase in responses to market moves along with the rise in persistency. This can be interpreted that Indian market has enduring tendencies and was least affected by the crisis especially in the long run. In contrast, US stock market became more reactive to changes but they have not shown any increase in lasting tendency as α has gone up from .05 to .11 but β has gone down from .92 to .89.

Diagnostic Testing

The diagnostic testing of the fifteen GARCH (1, 1) models fitted in the study has been done. The mean and variance of standard residuals are coming out to be close to zero and unity respectively for all the fitted fifteen models (Table 3).

Ljung-Box (Q) statistics of standard residuals and squared standard residuals ($Q^2(24)$) have been estimated for all the fifteen fitted models. Indian data (eight models) has shown that the null of no autocorrelation for standard residuals and squared standard residuals, has been rejected and accepted respectively for six models out of eight models. In the rest two models (of former period of second upheaval and latter period of fourth upheaval) the null of no autocorrelation of standard residuals and squared residuals are accepted. This proves that GARCH (1, 1) models are a perfect fit of conditional volatility for all the four periods of study of Indian stock market (Karmakar, 2005). The same testing on the seven fitted models on US data has shown that null of no autocorrelation on standard residuals has been rejected for former period of second upheaval only and for fitted models of rest of the periods, it has been accepted. Null of no autocorrelation for squared residuals is also accepted for all the seven fitted models of US data. This proves that GARCH (1,1) model is a good fit of conditional volatility during these period of study for US too (Karmakar, 2005).

Table 3: Statistics for Diagnostic Testing of GARCH (1, 1) Model
(Details of Standardized Residuals)

SN	Particular	Time Period	Coefficients	BSE	Dow Jones
1	Economic Reforms in India	Jan 1991- Dec 1993	Mean	.043	No ARCH Effect
			Variance	1.02851	
			Jarque Bera	1130.394#	
			Q (24)	57.525*	
			Q^2 (24)	27.177	
		Jan 1994- Dec 1996	Mean	.001545	-.016069
			Variance	1.04	1.0186
			Jarque Bera	41.29#	100.4113#
			Q (24)	58.30*	30.605
			Q^2 (24)	37.49	16.276
2	Introduction of Security Depository System in India	Jan 1997-Dec 1999	Mean	-.0277	.001937
			Variance	1.00477	1.001330
			Jarque Bera	112.32#	33.145#
			Q (24)	31.411	42.65*
			Q^2 (24)	24.547	16.87
		Jan 2000-Dec 2002	Mean	-.050871	-.047002
			Variance	1.0522	1.1862
			Jarque Bera	185.7245#	9693.097
			Q (24)	39.741*	17.312
			Q^2 (24)	16.038	2.1865
3	Introduction of Derivatives in India	Jan 1999-Dec 2001	Mean	.037046	-.020682
			Variance	1.01465	1.07235
			Jarque Bera	73.207#	218.98#
			Q (24)	30.299*	22.089
			Q^2 (24)	16.55	18.466
		Jan 2002-Dec 2004	Mean	-.024147	-.042300
			Variance	1.01364	2.26176
			Jarque Bera	25.966#	1444.040#
			Q (24)	34.22*	22.877
			Q^2 (24)	50.192*	15.410
4	Sub-prime mortgage crisis in USA	Jan 2005-Dec 2007	Mean	-.50525	-.034876
			Variance	1.06531	1.09708
			Jarque Bera	397.223#	1046.652#
			Q (24)	35.605*	29.046
			Q^2 (24)	10.239	7.3595
		Jan 2008-Mar 2010	Mean	-.060184	-.004614
			Variance	1.053435	.950837
			Jarque Bera	211.6399#	325.51
			Q (24)	18.01	22.304
			Q^2 (24)	12.426	52.129*

#Null of normalcy is rejected; * autocorrelation is significant at 5% level of significance

Discussion

During first upheaval of reform, it brought uncertainty in Indian market because it was not known that the reforms will last or fade away. Therefore, after the reforms markets became more volatile and changes were not persistent and the changes quickly die out which is quite justified. During the second upheaval of introduction of depository in India which was much awaited change brought dynamism in the market. Securities market became more mature after the introduction of depository system. A long awaited betterment of the market is reflected by introduction of depository institution in India. Therefore this response of the market is obvious. The third upheaval of introduction of derivatives in India market is marked with less change in the market. Derivatives provide better situation of price discovery and increases liquidity. Derivatives facilitate levered trading which is possible only in the mature market. Derivatives increase speculation too. Because of mixed response of derivative on the securities market no significant impact is seen on volatility. In the fourth period of study Indian stock market shows least impact and remained on its normal trajectory which was only marked with some correction especially in comparison of US stock market during the same period. This is because of conservative ways of Indian financial system which has proved to be a boon which was usually criticized by western thinkers. This is an obvious result of this study.

Conclusion

This study can be concluded keeping the following points in view:

- All the fifteen out of sixteen time series covering four upheaval periods have been modeled successfully using GARCH (1, 1) model for conditional volatility.
- The conclusion of the results of Indian and US market during all the four periods of study are as follows:

Economic Reforms in India	Disturbance and uncertainty has been witnessed as Indian stock market become more reactive to change and less persistent after the introduction of economic reforms. This can be concluded as introduction of reforms did change the market but uncertainty prevailed due to resistance or adjustment or continuity of the change. This implies that change should be brought gradually and it should have strong footing so that confidence of market remains with the change in policy.
Introduction of Security Depository System in India	After the introduction of the depository system market has become more dynamic as it not only increased its reactive tendency but also became persistent in having the change for longer duration. This implies that positive change is welcomed in the Indian stock market. This is a good indication for the future growth and development of the Indian stock market.
Introduction of derivatives in India	The Indian stock market became mundane after the introduction of derivative market in India. The reason can be attributed to the focus of investors shifting from to equity to derivatives market. This was an obvious fall out.
Sub-prime mortgage crisis in USA	Indian stock market has become more dynamic after the crisis. It has not only become more reactive to changes but also more persistent than what it was before the crisis. This has a good implication that economic liberalization should have prudence and pragmatic eye keeping the long-term effects in mind.

- It has been found that in terms of conditional volatility there is no meaningful co-movement among Indian and US stock markets. Especially during the fourth upheaval Indian stock market has shown resilience which is not shown in the US stock market. It is concluded that there is no association worthy to be noticed among Indian and US stock markets because of rudimentary difference in both the economies especially in the long-term.

Implications on Indian Securities Market

In securities market test of time is when there is some economic turmoil. Uncertainties can be predicted during normal conditions but during economic uproar these uncertainties in the securities market can not be easily predicted. This paper analyzed four such periods of unpredictable uncertainties witnessed by Indian economy during last two decades. The findings of this paper implies that the co-movement of conditional volatility in Indian and US stock market is not strong enough to bank upon US stock market movements for Indian investment decisions without further analysis. The results of this empirical study can be used by players of the Indian securities market to get better equipped to face any upcoming economic turmoil and can take accordingly judicious decisions regarding investments in the Indian stock market. An in depth study on the conditional volatility in both the markets can be incorporated separately for short term and long term co-movement and its implications on the Indian securities markets can be studied. There is scope for future research.

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Footnotes

1 ARCH stands for Auto Regressive Conditional Heteroscedasticity process which is deployed to model *time varying variance* time series. It is originally developed by Engle (1982).

2 Derivatives are those financial instruments which derive their value on some underlying asset. The underlying asset may be a security, commodity, currency, interest rate, index number etc.

3 Security Depositories facilitate secure deposit of securities in dematerialized form. In India, Securities Depositories started in 1996 and presently two depositories NSDL and CDSL are functional.

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BRIC Stock Markets: An Econometric Analysis

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Globalization, economic adjustment and integration among countries have increased relation among stock markets and the correlation may in turn compel investors' to allocate their funds and change their portfolios. The present paper is an attempt to understand this relationship among BRIC countries An econometric analysis has been conducted on BRIC countries stock market returns for the period 2004 to 2010 .The term BRIC includes Brazil, Russia, India and China. The main objective of this study is to provide investor's information related to stock market co-integration among the players of BRIC financial markets

Keywords: *Globalisation, BRIC, Co-Integration, Stock Market*

Introduction

In a globalised world, knowledge of international stock market organizations is necessary for investors, investment companies and policy makers. Understanding the information linkages and relations between markets are important for policy makers and fund managers in their financial decisions in relation to investment and risk management. Like if the stock market of different countries moves together then investing in different stock market would not generate required portfolio diversification (Lim, 2007). For this, it is imperative for them to have an accurate estimate of the degree and nature of correlation among the returns across the global stock market (Siddiqui, 2009) Integration can also help the policy makers in framing suitable policies for he economy in order to take care of the crisis moving from other markets to domestic market. Therefore, a comprehensive study on stock market integration will carry a lot of importance in the present day situation. Integration of financial markets is a process of unifying markets and the process of integration is facilitated by an unrestrained access of participants to various market segments. Financial markets all over the world have witnessed growing integration within as well as across boundaries, spurred by deregulation, globalisation and advances in information technology[1] .Globalisation in capital markets and reduction of restrictions on international cross listings have led to greater flows of capital between economies, easier ownership and trading in securities from around the world. With increased market integration, the current world financial markets have become more closely correlated and interdependent over time.

The present study is a modest attempt in this direction and examines the interdependence among BRIC economies. In economics, BRIC (typically rendered as "the BRICs" or "the BRIC countries" or known as the "Big Four") is a grouping acronym that refers to the.countries of Brazil, Russia, India, and China that are deemed to all be at a similar stage of newly advanced economic development.

World economies have seen many bumps & turbulence over a recent past. That is the main reason why BRIC countries have gained importance in the eyes of world wide investors. According to Kulkarni[2], "reducing rates of internal economical growth, reduction in domestic demand, falling markets have created major threats to the survival of Global Investors & they are searching for new avenues for investing their funds to ensure a good return on capital & also the safety for their capital. BRIC Countries offer high level of economic growth with sustainable rate of economic activity that is estimated to last for some decades to come". Given the turbulent global market scenario investor are getting attracted to BRIC nations due to high rate of return on investment plus a Capital appreciation anticipated. As a Global Investor one can not ignore the growth potential of these countries & any investment in these countries would guarantee an improvement Portfolio performance. This has diverted the attention of most of the global Investors

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from western countries to BRIC nations. This global attention would again help these countries to harness their resources in most optimum way & would make these markets more competitive ensuring more transparency in market operations.

Literature Review

There is a diverse volume of literature on the stock market integration and information Spillover (both in terms of return and volatility) across the markets. Stock markets integration naturally constitutes a privileged field for financial research. Markets are said to be integrated if they share a common trend, that is to say, if they move together

Darrat et al., (2000) used the Johansen-Juselius test and suggested that the Middle East emerging stock markets are segmented globally, but appear highly integrated within the region. Owen (2002) investigated time-varying interdependence between South Africa and both the UK and US is modeled using a latent variable approach and founded little interdependence prior to March 1995 when exchange controls and a dual exchange rate regime were in place.Yang et al., (2002) examined long-run relationships and short-run dynamic causal linkages among the U.S., Japanese, and ten Asian emerging stock markets, with the particular attention to the 1997-1998 Asian financial crisis and founded that the degree of integration among countries tends to change over time, especially around periods marked by financial crises, Marashdeh (2005) Examined financial integration among four emerging stock markets in the Middle East and North African (MENA) region and utilized the newly proposed autoregressive distributed lag (ARDL) approach to cointegration. Barari and Lucey (2005) studied the evolution of global equity market integration using US dollar denominated iShares and applied time varying methodology for the analysis of both short-term and long-term co movements that provide detailed evidence on the pattern and dynamics of the equity market linkages. Febrian and Aldrin (2007) observed the co-integration and causal relations among three major stock exchanges in Southeast Asia and employed Value at-Risk with delta-normal approach. Claudio (2007) investigated the contribution of economic and financial integration to international stock markets co movements by factor vector autoregressive framework (F-VAR). Robert, Jr (2008) investigated the time-series relationship between stock market index prices and the macroeconomic variables of exchange rate and oil price for Brazil, Russia, India, and China (BRIC) using the Box-Jenkins ARIMA model. Although no significant relationship was found between respective exchange rate and oil price on the stock market index prices of either BRIC country. Wang and Moore (2008) investigated the extent to which the three emerging Central Eastern European stock markets have become integrated with the aggregate eurozone market over the sample period from 1994 to 2006 by utilizing the dynamic conditional correlation and founded a higher level of the stock market correlation during the period after the Asian and Russian crises and also during the post-entry period to the European Union. Lim L. K. (2007), examined the direction of Granger causality between returns of ASEAN-5 markets. The results of the Granger causality tests indicate interdependence between ASEAN-5 market Returns Chittedi investigated the stock indices of the founded that co integration existing between India and developed countries. (USA, UK, Japan, France and Australia) Bakri et al., (2009) examined stock market integration among the emerging stock market of Indonesia and its major trading partners (Japan, the US, Singapore and China). We employ the newly proposed autoregressive distributed lag (ARDL) approach to co integration and recent weekly stock market data spanning from July1998 to December 2007. Burcu (2009) examined the integration of stock markets in Germany, France, Netherlands, Ireland and UK over January 1973-August 2008 at the aggregate market and industry level considering basic materials, consumer goods, industrials, consumer services, health care and financials. Through-convergence and convergence methods. Hedi and Fredj investigated the stock market integration hypothesis of two emerging countries (the Philippines and Mexico) into the world capital market over the last three decades and used the nonlinear co integration techniques to show that the stock market integration process is nonlinear, asymmetric and time-varying. Surya (2009) showed that there is one way volatility spillover between Indonesia and USA (USA effecting Indonesia). Bhattacharyya and Banerjee (2009) examined the existence (or absence) of integration among stock indices of 11 developed and emerging stock markets from three continents: Asia, Europe and America by using an error correction vector auto regression (VECM) model. Phuan et al , (2009) investigated that the ASEAN-5 stock markets share a common trend that implies the markets move together and driven by common shocks, which have a permanent effect, providing limited long-term gains to international diversification Ghulam Sarwar and Rafiqul Bhuyan (2009) investigated the spillover effects between the US stock market and the emerging stock markets of Brazil, Russia, India, and China (BRIC) for the period 1995 to 2007 and used a variant of the aggregate shock model under the GARCH framework and allowed for both the mean return and volatility spillover effects from the US market to the BRIC markets. Shuming Bai (2007) investigated the level of integration among global financial markets. Claudio Morana (2007) investigated the contribution of economic and financial integration to international stock markets co movements by means of a large scale macro econometric model, set in the factor vector autoregressive framework (F-VAR). Gay (2008) established relationship between share prices and macroeconomic variables is well documented for the United States and other major economies.

Rationale and Objective

This study aims to investigate the stock market Integration in the context of BRIC stock markets whereby these countries have a different economic and financial structure and political background and if these countries are independent investors can make a diversified portfolio and this will also help in reduction of turmoil effects. The present study contributes to the finance literature on the international transmission of information among the global financial markets by focusing on BRIC equity markets that have hitherto received little attention in the empirical spillover literature. The short-term information transmission between the equity markets of BRIC economies shall be investigated. The returns from the SENSEX index to the major equity market indices of the BRIC economies shall be examined. The basic objective of the paper is to find integration among BRIC stock markets.

Methodology

Return of the indexes shall be used to find out the co-integration among the stock markets, and daily returns have been calculated by taking the natural logarithm of the daily closing price relatives, i.e. r = ln (Pt/Pt-1) where Pt is the closing price the tth day. Following methods/tools are used to test correlation; stationarity of time series, co- integration and causalities between the stock markets using Eviews 5.1.

Sample: BRIC stock markets

Brazil- Bovespa stock exchange

Russia- Russian Stock Exchange.

India –Bombay Stock exchange – (BSE)

China- Shanghai Stock Exchange

Period- Year 2004-2010

Data has been taken from yahoo finance website.

Hypothesis

Hypothesis 1- Stock markets return are not normally distributed

Hypothesis 2- Existence of unit root (non stationarity) in stock markets

Hypothesis 3- No co integration among BRIC stock markets

Hypothesis 4- No causality is found between BRIC stock markets.

The Jarque-Bera Test shall be used to test whether returns of stock markets follow the normal probability distribution.

In a time-series statistical model, variables need to be tested first to see whether they are stationary variables. For this reason, the paper uses the common Augmented Dickey and Fuller (ADF) and Phillips-Perron unit root test method.

Co-integration test shall be used for pinpointing the long run relationships among the markets under study. Engle and Granger (1987) have given the Co integration theory, i.e, non-stationary variables can become stationary variables by linear combining these non-stationary variables, namely, that these variables have a co-integration relationship. i.e, there exist long-term even relationships among these variables. Even if these variables depart from the equilibrium levels because of some short-term outside disruptions, with time, the degree of variation of the variables will gradually decrease and variables will return to the general equilibrium levels.

For Causality Test, Granger test shall be used, which identify the direction of the influence from one series to another. A time series X is said to Granger-cause Y if it can be shown, usually through a series of t-tests and F-tests on lagged values of X (and with lagged values of Y also included), that those X values provide statistically significant information about future values of Y.

Analysis and Findings

Table 1 provide summary statistics about index prices, namely sample means, minimums, maximums, medians, standard deviations, skew ness, kurtosis and the Jarque-Bera. It is noted from Table 1 that standard deviation in RTS return is highest, thus showing the highest volatility during the period of study. SENSEX is found to be least volatile during the period under consideration. It is further noted that only BOVESPA and SSE shows positive skew ness. To see whether the returns of the stock indices under study are normally distributed, Jarque-BeraTest Statistics are used and the same are given in Table 1 .Accordingly the first hypothesis is accepted as the results show that the returns are not normally distributed. This leads us to the issue of stationary of the time series of returns under study (Hypothesis 2).

Table 1: Descriptive Statistics

	BOVESPA	RTS	SENSEX	SSE
Mean	-0.070956	-0.291203	-0.083735	-0.040483
Median	-0.145634	-0.195379	-0.159559	-0.077047
Maximum	12.09505	21.19942	11.60444	9.256154
Minimum	-13.67561	-341.7053	-15.98998	-9.034251
Std. Dev.	2.030131	9.331911	1.849443	1.929034
Skewness	0.035205	-33.7692	-0.063887	0.326532
Kurtosis	8.484581	1236.524	9.475165	5.829848
Jarque-Bera	1818.924	92268064	2535.869	509.9377
Probability	0.000000	0.000000	0.000000	0.000000
Sum	-102.9567	-422.5431	-121.4997	-58.74023
Sum Sq. Dev.	5976.077	126272.6	4959.638	5395.702
Observations	1451	1451	1451	1451

Unit Root Test

A unit root test is used to test a time series for stationarity. The most appropriate and widely used tests are the Augmented Dickey-Fuller (ADF) test and Phillips-Perron (PP) test. Both tests use the existence of a unit root as the null hypothesis.

Augmented Dickey-Fuller (ADF Test)

Inferring from Table 2 one can conclude that the null hypothesis i.e the hypothesis 2 about the existence of a unit root can be rejected for all the variables using intercept terms in the test equation at the level form on the basis of the probability value which is 0. So it can be said that all the variables not contain a unit root that is stationary in their level forms.We accept the alternate hypothesis i.e. variables are stationary.

Table 2: Augumented Dickey Fuller Test

Null Hypothesis: Unit root (individual unit root process)				
Sample: 1 1451				
Series: BOVESPA, RTS, SENSEX, SSE				
Exogenous variables: Individual effects				
Automatic selection of maximum lags				
Automatic selection of lags based on SIC: 0				
Total (balanced) observations: 5800				
Cross-sections included: 4				
Method			Statistic	Prob.**
ADF - Fisher Chi-square			338.346	0.0000
ADF - Choi Z-stat			-17.6065	0.0000
** Probabilities for Fisher tests are computed using an asympotic Chi -square distribution				
. All other tests assume asymptotic normality.				
Intermediate ADF test results UNTITLED				
Series	Prob.	Lag	Max Lag	Obs
BOVESPA	0.0000	0	23	1450
RTS	0.0000	0	23	1450
SENSEX	0.0000	0	23	1450
SSE	0.0000	0	23	1450

The Phillips-Perron test is less restrictive and provides an alternative way for checking the stationarity of a time- series. Table 3 summarizes necessary output related to Phillips-Perron Test and it also supports the conclusion inferred from the Dickey-Fuller tests.

Keeping in consideration the fact that the time series of various stock indices under study are stationary at their level as inferred from the ADF Test and the P-P Test, the co- integration test and the Granger causality test are performed accordingly.

Table 3: Phillips-Perron test results

Null Hypothesis: Unit root (individual unit root process)		
Sample: 1 1451		
Series: BOVESPA, RTS, SENSEX, SSE		
Exogenous variables: Individual effects		
Newey-West bandwidth selection using Bartlett kernel		
Total (balanced) observations: 5800		
Cross-sections included: 4		
Method	Statistic	Prob.**
PP - Fisher Chi-square	335.116	0.0000
PP - Choi Z-stat	-17.4967	0.0000
** Probabilities for Fisher tests are computed using an asymptotic Chi-square distribution. All other tests assume asymptotic normality.		

Intermediate Phillips-Perron test results

Series	Prob.	Bandwidth	Obs
BOVESPA	0.0000	28.0	1450
RTS	0.0000	3.0	1450
SENSEX	0.0000	14.0	1450
SSE	0.0000	5.0	1450

Co-integration Test

Co-integration is a property of two or more variables moving together through time, and despite following their own individual trends will not drift too far apart since they are linked together in some sense. The results of the unit root test show that the time series of indices of share prices related to various stock exchanges under study are stationary. Therefore, co-integration will be a suitable means for correctly testing hypotheses concerning the long-term relationship among the time series under the study. It tests a set of null hypothesis that there exist no co-integrating equations among variables. First part of the co-integration results (Table 4), the trace test, indicate that there exists 4 co-integrating vectors at 5% level. Second part of the co-integration results (Table 4), the Maximum Eigenvalue test, also indicates the same result. Therefore, both tests indicate that stock markets across the world are company- integrating, that is, they are trending together which may indicate the fact that assets allocation across the markets may not provide enough opportunities of diversification gains. Further, the evidence that the co-integrating results are significant at most all level at the 5% level which could hint at that there may exist three types of a long-term or co-integrating relationship between prices of stock markets across the world. It is important to note that co-integration reflects only co-movements between two time series over a period of time among variable under study but does not represent the correlation among them. Hence, through the co-integration tests, one can conclude that by and large stock price indices across the world move together.

Table 4: Cointegration Test

Sample (adjusted): 6 1451				
Included observations: 1446 after adjustments				
Trend assumption: Linear deterministic trend				
Series: BOVESPA RTS SENSEX SSE				
Lags interval (in first differences): 1 to 4				
a)Unrestricted Cointegration Rank Test (Trace)				
Hypothesized		Trace	0.05	
No. of CE(s)	Eigenvalue	Statistic	Critical Value	Prob.**
None *	0.220322	1159.964	47.85613	1.0000
At most 1 *	0.202233	800.0922	29.79707	0.0001
At most 2 *	0.172152	473.3850	15.49471	0.0001
At most 3 *	0.129293	200.1981	3.841466	0.0000
Trace test indicates 4 cointegrating eqn(s) at the 0.05 level				
* denotes rejection of the hypothesis at the 0.05 level				
**MacKinnon-Haug-Michelis (1999) p-values				
b)Unrestricted Cointegration Rank Test (Maximum Eigenvalue)				
Hypothesized		Max-Eigen	0.05	
No. of CE(s)	Eigenvalue	Statistic	Critical Value	Prob.**
None *	0.220322	359.8719	27.58434	0.0001
At most 1 *	0.202233	326.7071	21.13162	0.0001
At most 2 *	0.172152	273.1869	14.26460	0.0001
At most 3 *	0.129293	200.1981	3.841466	0.0000
Max-eigenvalue test indicates 4 cointegrating eqn(s) at the 0.05 level				
* denotes rejection of the hypothesis at the 0.05 level				
**MacKinnon-Haug-Michelis (1999) p-values				

Pair-wise Granger Causality Tests

After the co-integration test, there is a need to confine the degree and the direction of correlation among the stock price indices under study pair-wise Granger Causality Tests are conducted These tests involve examining whether lagged values of one series have significant explanatory power for another series. They have null hypotheses of no granger causality. The results of these tests summarized in Table 5 and it indicates whether there exists significant Granger Causality among various stock markets. It can be inferred from the observation of table5 that no stock market is playing a very dominant role, as the direction of the Granger Causality is not following i.e. there do not exist granger causality among BRIC stock markets.

Table 5: Pairwise Granger Causality Tests

Sample: 1 1451			
Lags: 5			
Null Hypothesis:	Obs	F-Statistic	Probability
RTS does not Granger Cause BOVESPA	1446	1.42010	0.21400
BOVESPA does not Granger Cause RTS		0.56502	0.72690
SENSEX does not Granger Cause BOVESPA	1446	4.05663	0.00117
BOVESPA does not Granger Cause SENSEX		2.76042	0.01727
SSE does not Granger Cause BOVESPA	1446	3.51208	0.00369
BOVESPA does not Granger Cause SSE		0.42207	0.83358
SENSEX does not Granger Cause RTS	1446	0.97044	0.43458
RTS does not Granger Cause SENSEX		0.50989	0.76897
SSE does not Granger Cause RTS	1446	0.24347	0.94313
RTS does not Granger Cause SSE		0.28618	0.92081
SSE does not Granger Cause SENSEX	1445	4.13516	0.00099
SENSEX does not Granger Cause SSE		1.24782	0.28429

Conclusion

Interdependency among BRIC stock markets is studied primarily through Co-integration and the Granger Causality. This study is a continuation of research on the issue of growing interdependency among the stock markets. It is observed that stock prices among these countries are trending together Furthermore; it provided that no stock market is playing a dominant role in influencing other markets. If the results of this study, regarding the influence of the one market on other markets, are compared with the previous studies in the literature, it can be concluded that stock market integration and causation between different markets have changed over the time. In brief, it can be concluded that the interdependencies among the stock markets in the world has increased and no clear direction of relationships exists in the sense of Granger Causality indicating the fact that influence of few markets has eroded over a period of time. It is hoped that the results of the present paper would be useful for individual and institutional investors who mainly focus on or invest in Asian markets and for the management of their portfolios and policy making.

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Footnotes

1 http://rbidocs.rbi.org.in/rdocs/Publications/PDFs/77579.pdf

2 Shirish Kulkarn i http://ezinearticles.com/?BRIC-Countries---An-Overview&id=4133540

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Positive Feedback Strategy of FIIs in Indian Stock Market: A Sectoral Analysis

Raju G.[1] and Santosh Kumar[2]

The Positive feedback hypothesis stipulates the strategy of rushing in when the markets are booming and rushing out when the markets are on the decline The present study empirically documents the static and dynamic interaction between FII flows and returns of various indices of National Stock Exchange, using daily data for the variables from 2000 to 2009 Results indicate that there is evidence of positive feedback trading in Indian context in four selective indices viz Bank Nifty, CNX Midcap, CNX Nifty Junior, and S&P CNX 500 out of fifteen sampled indices It is also observed that FIIs are not only causating agents but also the effects of the stock return, and there is selective bidirectional relationship between net FII flows and returns of selected indices viz. CNX Midcap, CNX Nifty Junior, S&P CNX 500 and S&P CNX Nifty out of the (fifteen) sampled indices

Keywords: *Positive Feedback, FII, Granger Causality, VAR, Market Return, Impulse Response Function, Nifty*

Introduction

India allowed Foreign Institutional Investors (FIIs) to invest in the domestic financial markets in September 1992. Since then the investment by FIIs in the Indian market has been steadily growing. Both the purchase and sales by FIIs have changed significantly after a stagnant trend till 2003. This gives a prime facie clue of the dynamic interaction between stock return and (Foreign Institutional Investment). A general consensus about the FIIs is that they are speculators and their investments are driven by short term gains, In their pursuit of short term gains they adopt short term trading strategies like positive feedback trading and herding (i.e. buy or sell stocks together as a group). Such behavioral biases of FIIs may lead to price overreaction and contribute to the creation or exacerbation of a financial crisis. In this study, an attempt has been made to analyze the dynamic interaction between FIIs and returns of various stock market indices in India.

Review of Literature

Analyzing monthly data from May 1993 to December 1999, Chakrabarti (2001) found that the FII net flows were more likely to influence equity market returns, with the FIIs not having informational disadvantages compared to domestic investors. Using the data between January 1999 and May 2002, Mukherjee et al., (2002) found that FII activities had a strong demonstration effect and are driving the domestic market suggesting that the FIIs flows tend to be caused by return in the domestic market. Batra (2003) used the daily and monthly data of FII and market return from 2000 to 2002 and found the strong evidence that FIIs have been positive feedback investors and trend chasers at aggregate level on a daily basis. However, there are no positive feedback chasers on monthly basis. Gordon and Gupta (2003) indicated that portfolio flows in India are determined by both external and domestic factors. Dua and Sen (2005) found that the real effective exchange rate is co integrated with the level of capital flows, volatility of capital flows, high-powered money, and current account surplus and government expenditure. Babu and Prabheesh (2008) examined the dynamic interaction between FII flows and stock market returns using daily data from 2003 to 2007. They found the existence of bidirectional causality between FII flows and stock returns. They also found support for information revelation hypothesis and momentum trading hypothesis. Prasanna (2008) examined the investment preferences of FII in India and find that FII invest more in companies with a higher volume of shares owned by the general public. Further he also concluded that share return and EPS are the crucial factors in determining the investment of FII. Among external factors, LIBOR and emerging market stock returns are important, while the primary domestic determinants are the lagged stock return and changes in credit ratings.

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Dornbusch and Park (1995) argued that foreign investors pursue positive feedback trading strategies that make shocks overreact to changes in fundamentals. Warther (1995) documented that unexpected shocks to mutual fund flows in U.S have a strongly positive contemporaneous effect on returns, in line with the findings of Clark and Berko (1997) who reported positive significant relation between concurrent returns and foreign equity purchases using monthly data in Mexico. Choe, Kho and Stulz (1998) also examined the impact of foreign investors on stock returns in Korea before and after the 1997 using daily data. They found the evidence of positive feedback trading before the Asian crisis. Froot et al., (2001) found that the international capital inflows predict or lead price changes. Bonser–Neal et al., (2002) analyzed the foreign trading behaviour on the Jakarta stock exchange (Indonesia) between 1995 and 2000 and detected the strong positive feedback trading before the Asian crisis. Giffin et al., (2002) used a theoretical model and empirical analysis to show that return performance is an important factor in understanding equity flows. Richards (2002) using daily data for daily net purchases by foreigners in six Asian emerging equity markets over 1999-2001 gave strong evidence of positive feedback trading with respect to domestic, US and regional equity returns. Thus there are mixed results in Indian context. Some of the earlier studies strongly lend support to the positive feedback trading whereas few studies accept it as a result of spurious correlation or the case of omitted variables.

Thus, a large number of studies favour the prevalence of positive feedback trading in various stock markets across the globe. Some studies deny its existence. Under this backdrop, in this study, an attempt is made to examine the static and dynamic relation between FII and returns of various indices in Indian context.

In order to accomplish in depth study of returns of sectoral indices vs. FII investment, the following specific objectives are formulated.

(i) To study the direction of relationship between FII and returns of various indices.

(ii) In the case of interdependence do the FII flows dynamically relate to the lagged values of returns of various indices and vice versa?

(iii) Does the positive feedback trading hypothesis exist in the Indian stock market?

Data and Methodology

A. Database

The aggregate daily FII data comprising three components purchases, sales and net purchases (purchases less sales) have been obtained from 7th January 2000 to 6th August 2009 from the monthly bulletin of Money Control. We have frequently used NFIIP referring to net FII purchases at time t.

The data on various market indices is collected from the official website of National Stock Exchange. The indices selected for the study are S&P CNX Nifty, CNX Nifty Junior, CNX 100, S&P CNX 500, CNX Midcap, Nifty Midcap 50, S&P CNX Defty, CNX IT, CNX Bank, CNX Infrastructure, CNX Realty, CNX Midcap200, The S&P CNX Nifty Shariah/ The S&P CNX Nifty Shariah, S&P ESG India. Days when there is no trading are omitted and the price change is computed from the last day the market was open. The returns for various market indices are taken by the log difference in their price indices.

$$RT = \text{Log}P_t - \text{Log}P_{t-1}$$

RT is the return of market index at time t.

P_t and P_{t-1} indicate the market's index at the end of day t and t-1 respectively.

Similarly RTP and RTF are the returns in the previous period (t-1) and following period (t+1) respectively.

The whole study is undertaken using daily data. Daily data give more precise results and are able to capture the lead lag dynamics between FII and market return.

B. Methodology

To carry out the in depth analysis between FII and market return, the whole study is accomplished in three stages as follows:

(1) Static Analysis

As a first step to explore the direction of relationship between NFIIP and market return we perform Granger Causality test to eliminate the simultaneity bias in the bivariate model. By this we specify the channels of causality using the standard "identification by ordering" methodology. The channel of causality is established from the results of Granger Causality test (Granger, 1969). Then we also check the (unit root properties) of variables by Augmented Dickey Fuller test and Phillips Perron test to estimate the bivariate model under OLS assumption.

(2) Dynamic Analysis

Further in order to capture the dynamic interaction between market return and NFIIP flows we use unrestricted Vector Auto Regression (VAR) without any restrictions on the structure of the system as below:

$NFIIP_t = NFIIP_{t-1} + NFIIP_{t-2} \ldots \ldots + NFIIP_{t-n} + R_{t-1} + R_{t-2} \ldots \ldots + R_{t-n} + \epsilon_1$

$R_t = R_{t-1} - R_{t-2} \ldots \ldots + R_{t-n} - NFIIP_{t-1} + NFIIP_{t-2} \ldots \ldots - NFIIP_{t-n} + \epsilon_2$

Where $NFIIP_t$ is the net FII purchases at time t.

We use VAR to quantify the impact of innovations (ϵ_1, $\epsilon 2$) in returns by net FII purchases and vice versa. In addition we also generate Impulse Response Function to trace the time path of the shocks on the variables contained in the VAR and finally identify the appropriate lag length using the AIC and SBC criterion.

(3) Test of Positive Feedback Trading Hypothesis

The positive feedback trading hypothesis describes the strategy of rushing in when the markets are booming and rushing out when the markets are on the decline. Thus it expects a positive relationship between current FII investment and the past performance of the market. For estimation, we examine the following regression.

$NFIIP_t = \beta R_{t-1} + C$

Where $NFIIP_t$ is net FII purchases at time t. It is calculated by subtracting net sales from net purchases.

β is regression coefficient and R_{t-1} is the return in the previous period.

$\beta > 0$ indicates positive feedback trading.

Results and Discussion

The trend and pattern of the movement of Nifty and net FII purchase during the period from 7th January 2000 to 6th August 2009 in equities are presented in Figure 1 and 2 respectively.

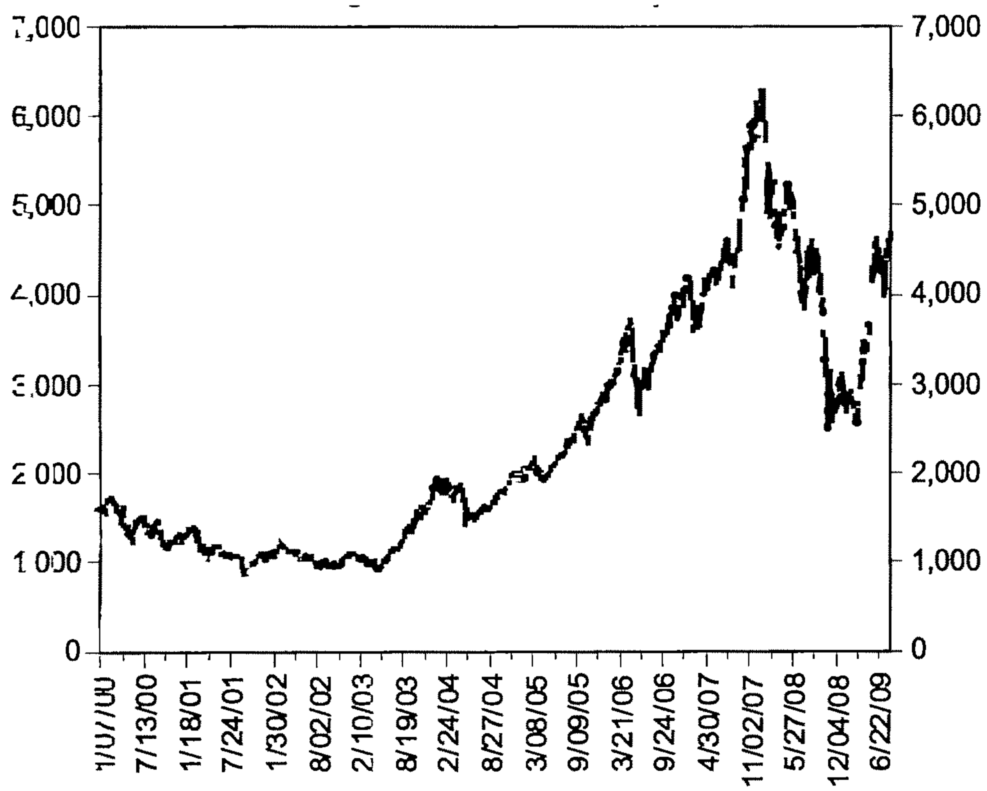

Figure 1: Movement of Nifty

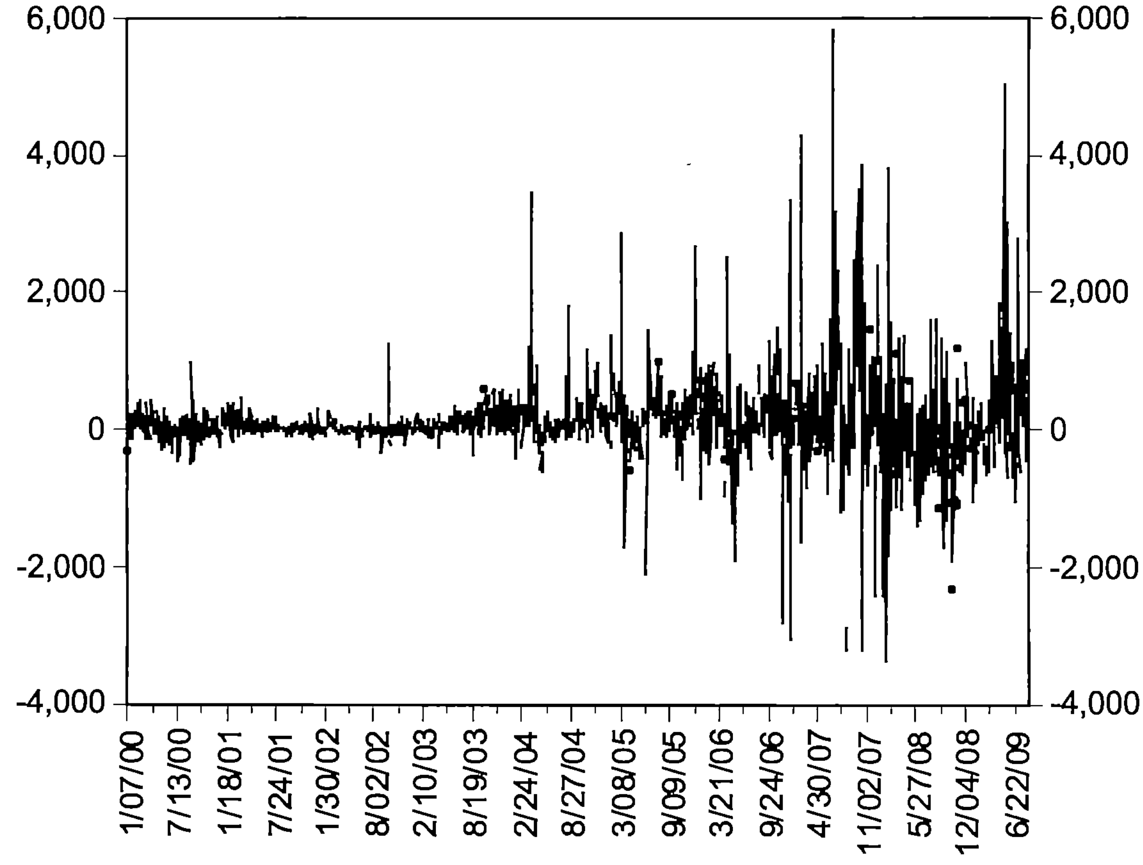

Figure 2: Movement of Net Fill Purchase (Rs. in Crores)

Table 1 and 2 show the descriptive statistics and the autocorrelation (AC) and partial autocorrelation (PAC) at different lags respectively for NFIIP and the different indices of NSE. The results of autocorrelation matrix reveal that NFIIP and the indices have very high correlation at lag 1 but lower correlation at higher lags indicating the daily FII investments and the values of the indices are independent of its distant lagged values. There is clear indication that FII pattern is short lived and persists for very short duration. Further we check the order of integration of the variables using unit root test based on Augmented Dickey Fuller Test and Phillips Perron test (Phillips and Perron, 1988). The results show that all the components of FIIs are stationary at levels indicating the absence of trend and the long term mean reversion. From the Jarque –Bera statistics we may also infer that the various components of FII are unlikely to have been drawn from a normal distribution. The standard deviation in FII, which is indicative of unconditional variance in FII, however continues to remain almost at high level for NFIIP but relatively low for the indices.

Table 1: Descriptive Statistics

Variable	Observation	Mean	Median	S.D	J. B.		Skewness	Kurtosis
					P value	Test stat		
NFIIP	2324	98.03	52.65	555.44	0.00	39553.04	1.48	23.00
Bank NIFTY	2330	0.0008	0.0008	.023	0.00	2336.09	-0.17	7.89
CNX IT	2337	0.0009	0.0003	0.057	0.00	1.63E+08	-31.10	1296.35
CNX Infrastructure	1344	0.0009	0.002	0.023	0.00	2953.30	-0.26	10.24
CNX 100	1593	0.0009	0.002	0.02	0.00	3809.45	-0.34	10.55
CNX Midcap	2091	0.0008	0.003	0.02	0.00	3986.8	-0.89	9.53
CNX Midcap 200	1370	0.0007	0.002	0.02	0.00	1969.3	-1.05	8.50
CNX NIFTY Junior	2337	0.0003	0.002	0.02	0.00	2116.56	-0.62	7.50
CNX Realty	615	-0.001	6.51E-05	0.04	0.00	368.77	-0.38	6.72
NIFTY Midcap 50	1344	0.0006	0.003	0.02	0.00	2474.03	-0.82	9.44
S&P CNX 500	2337	0.0005	0.002	0.02	0.00	3373.43	-0.48	8.81
S&P CNX 500 Shariah	516	0.0001	0.001	0.02	0.00	576.81	0.03	7.74
S&P CNX Defty	2337	0.0004	0.002	0.02	0.00	6051.83	-0.19	10.87
S&P CNX Nifty	2337	0.0004	0.001	0.02	0.00	4543.61	-0.24	9.81
S&P CNX Nifty Shariah	516	0.0001	0.001	0.02	0.00	682.87	0.22	8.14
S&P ESG India	1395	0.001	0.003	0.02	0.00	1347.62	-0.33	8.40

Table 2: Autocorrelation Matrix at Different Lags

Variable	Statistics	length of lag		
		1	3	5
NFIIP	AC	0.327	0.227	0.190
	PAC	0.327	0.127	0.061
Bank NIFTY	AC	0.125	-0.014	-0.048
	PAC	0.125	-0.001	-0.042
CNX IT	AC	0.016	-.0004	-0.005
	PAC	0.016	-0.004	-0.005
CNX Infrastructure	AC	0.080	0.006	-0.024
	PAC	0.080	0.017	-0.019
CNX 100	AC	0.066	0.000	-0.031
	PAC	0.066	0.006	-0.031
CNX Midcap	AC	0.180	0.056	0.022
	PAC	0.180	0.077	0.025
CNX Midcap 200	AC	0.157	0.033	0.030
	PAC	0.157	0.052	0.010

Variable	Statistics	length of lag		
		1	3	5
CNX Nifty Junior	AC	0.161	0.020	-0.010
	PAC	0.161	0.032	-0.004
CNX Realty	AC	0.108	0.067	-0.002
	PAC	0.108	0.062	0.003
NIFTY Midcap 50	AC	0.159	0.012	0.001
	PAC	0.159	0.020	0.007
S&P CNX 500	AC	0.130	0.014	0.001
	PAC	0.130	0.024	0.000
S&P CNX 500 Shariah	AC	0.067	0.028	-0.023
	PAC	0.067	0.029	-0.014
S&P CNX Defty	AC	0.109	0.007	0.004
	PAC	0.109	0.016	0.003
S&P CNX NIFTY	AC	0.076	-0.005	-0.017
	PAC	0.076	0.005	-0.017
S&P CNX NIFTY Shariah	AC	0.038	0.009	-0.033
	PAC	0.038	0.011	-0.028
S&P ESG India	AC	0.112	0.044	-0.019
	PAC	0.112	0.044	-0.010

We further test the direction of causality between returns of various indices and NFIIP using Granger causality test. Results show that the null hypothesis "RTP does not Granger cause NFIIP" is accepted. The null hypothesis "RT does not Granger cause NFIIP" is rejected in the case of indices viz.Bank Nifty, CNX Midcap, CNX Nifty Junior, S&P CNX 500 and S&P CNX Nifty out of sampled (fifteen) sampled indices and the null hypothesis "NFIIP does not Granger cause RT" is also rejected in the same set of indices except Bank Nifty. This is a clear indication of bidirectional causality between return of indices and NFIIP in these (five) selected indices. This is partially in consistent with the previous study by Babu and Prabheesh (2008) who examined the dynamic interaction between FII flows and stock market returns using daily data from 2003 to 2007. They found the existence of bidirectional causality between FII flows and stock returns and adequate symptom of momentum trading hypothesis.

The Vector Auto Regression (VAR) analysis between NFIIP and RT is undertaken with different lag lengths and the appropriate lag (six) is selected on the basis of AIC and SBC results for all the sampled indices. The NFIIP regression equations show that they are significantly correlated to their own lagged values up to four days in case of Bank Nifty, CNX 100, CNX Midcap 200, CNX Nifty Junior, S&P CNX 500, S&P CNX Defty, and S&P CNX Nifty, three days in case of CNX Infrastructure, CNX Midcap, Nifty Midcap 500 and two days in the case of remaining indices, where they have only significant relation with lagged daily returns up to one lag in the case of only four indices viz. Bank Nifty, CNX Midcap, CNX Nifty Junior, and S&P CNX 500. These results lend support to positive feedback hypothesis in Indian context in four selective indices out of fifteen sampled indices. The graphs for the impulse response function are also generated by VAR model. The response of NFIIP to one S.E shock to lagged return is sharp and significant for a very short period. However the impact remains intact for a prolonged duration with lesser fluctuations. The regression statistics also show that the NFIIP is significantly dependent on previous day return (RTP) and current day return (RT) in the case of Bank Nifty and S&PCNX Nifty whereas only dependent on previous day return (RTP) in the case of CNX Midcap out of fifteen sampled indices. Thus results of VAR model further support our conclusion from static estimation.

Table 3: Regression Statistics

Regression of Dependent Variable (NFIIP)	Independent Variable	Coefficient	Prob.
Bank NIFTY	C	88.88	**0.00**
	RT	5442.07	**0.00**
	RTP	5094.37	**0.00**
	Adjusted R-squared	0.103212	
CNX IT	C	98.45	0.00
	RT	182.09	0.37
	RTP	229.65	0.26
	Adjusted R-squared	0.00	
CNX 100	C	93.86	0.00
	RT	-301.00	0.45
	RTP	523.60	0.19
	Adjusted R-squared	0.00	
CNX Midcap	C	106.09	0.00
	RT	-691.48	0.29
	RTP	-1792.64	0.01
	Adjusted R-squared	0.00	
CNX Midcap 200	C	85.75	0.00
	RT	194.17	0.64
	RTP	670.88	0.10
	Adjusted R-squared		
CNX NIFTY Junior	C	85.74	0.00
	RT	194.17	0.64
	RTP	670.88	0.10
	Adjusted R-squared	0.00	
CNX Realty	C	36.01	0.00
	RT	-197.83	0.10
	RTP	-1.25	0.99
	Adjusted R-squared	0.00	
NIFTY Midcap 50	C	79.33	0.00
	RT	20.54	0.95
	RTP	201.69	0.50
	Adjusted R-squared	0.00	
S&P CNX 500	C	79.33	0.00
	RT	20.54	0.95
	RTP	201.69	0.50
	Adjusted R-squared	0.00	
S&P CNX 500 Shariah	C	36.23	0.00
	RT	-89.58	0.70
	RTP	-65.71	0.78
	Adjusted R-squared	-0.0029	
S&P CNX Defty	C	97.23	0.00
	RT	1046.85	0.08
	RTP	986.58	0.10
	Adjusted R-squared	0.00	
S&P CNX NIFTY	C	96.04	0.00
	RT	1925.15	0.00
	RTP	2586.40	0.00
	Adjusted R-squared	0.01	
S&P CNX NIFTY Shariah	C	36.23	0.00
	RT	-49.40	0.82
	RTP	-39.32	0.86
	Adjusted R-squared	0.00	
S&P ESG India	C	63.12	0.00
	RT	330.12	0.29
	RTP	111.03	0.72
	Adjusted R-squared	0.00	

Results and Conclusion

The empirical investigation of FII flows to India has elicited the following 'stylized facts' about the flows:

(i) FII flows are significantly correlated to their own lagged values up to four days in case of Bank Nifty, CNX 100, CNX Midcap 200, CNX Nifty Junior, S&P CNX 500, S&P CNX Defty, and S&P CNX Nifty, three days in case of CNX Infrastructure, CNX Midcap, Nifty Midcap 500 and two days in the case of remaining indices, where they have only significant relation with lagged daily returns up to one lag in the case of only four indices viz. Bank Nifty, CNX Midcap, CNX Nifty Junior, and S&P CNX 500.

(ii) The response of FII flows to one S.E shock to lagged return is sharp and significant for a very short period.

(iii) There is a bidirectional causality between return of indices and NFIIP in four selected indices viz. CNX Midcap, CNX Nifty Junior, S&P CNX 500 and S&P CNX Nifty out of 15 sampled indices

(iv) There is evidence of positive feedback trading in Indian context in four selective indices viz. Bank Nifty, CNX Midcap, CNX Nifty Junior, and S&P CNX 500 out of fifteen sampled indices.

In this study, the static and dynamic relationship between net FII flows and returns of various indices was analysed in Indian context. The above results are predominantly more important for investors because the quantum of FII inflows have substantially changed in the last decade due to liberalization and have influenced the stock market. Results substantially show that the FII traders have their own fashion of investment and normally their trend persist for a short duration. Further it also leads to the conclusion that the FII traders are rushing into the market when the market shows a bullish trend and rushing out of the market in bearish phase based on the movement in four selective indices.

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Marketing Strategies of Commercial Banks – A Study on SBI and ING Vysya Bank in Kadapa Corporation

P. Saritha

Marketing is a total system of business activities designed to plan, price, promote and distribute wanted and satisfying products to target markets to achieve organisational objectives. Marketing strategies of banking sector revealed that banks can base their marketing strategies on various parameters which are broadly in terms of 7Ps of marketing viz., Product, Place, Price, Promotion, People, Physical Evidence and Processes Marketing strategy is the firm's product-market choice which is guided by the environmental necessities and firm's objectives and capabilities The present paper focuses on the 'Marketing Strategies' of SBI and INGV Bank for their financial services in Kadapa Corporation, A P India Product related strategies include 'Interest based, Fee based and Technology based activities' 'Interest based activities strategy' includes mobilisation of deposits and advancing loans to the customers. Location strategy, parking place strategy and sitting facility strategy are ingredients of 'Place related strategies' Promotion related strategies comprise of 'Marketing division strategy, Advertising media strategy, Social activities strategy and Branding strategy' Price related strategies comprise 'Strategic pricing strategy, Pricing approach strategy and Price privileges strategy'. 'People related strategies' have a huge workforce manning the extensive network in the country. This massive manpower results in structural and managerial impediments and refutes the popular belief of the public sector banks is that the 'larger the number of employees better serve the customers' People related strategies are pertaining to well versed with computers and training programmes to employees The physical evidence refers to physical environment, facilities, the branch decors, excellent furnishings, spacious layouts and atmosphere. 'Processes' refer to the actual procedures, mechanisms, and flow of activities by which the service is rendered. 'Processes related strategies' are classified into 'Market processes, Customer processes and Operational processes'.

Keywords: *Marketing Strategy, Commercial Banks, Kadapa Corporation*

Introduction

Marketing is a total system of business activities designed to plan, price, promote and distribute wanted and satisfying products to target markets to achieve organisational objectives. Marketing strategies of banking sector revealed that banks can base their marketing strategies on various parameters which are broadly in terms *of 7Ps of marketing* like Product, Place, Price, Promotion, People, Physical Evidence and Processes, (Jha, 1995). Marketing of services essentially require the application of 7Ps as against the conventional 4Ps of marketing. This is because the services have certain distinct characteristics which make them different from products. The marketing strategy has to take several factors into account such as company's competitive size and position in the market, company's resources, objectives and policies, competitors' marketing strategies, target markets, buying behaviour, product life cycle stage and the character of the economy. The company monitors and adopts these factors to the marketing environment through various marketing systems: marketing planning system, marketing organisation and implementation system, marketing control system and marketing information system. The company implements to its micro - environment consisting of marketing intermediaries, suppliers, competitors and public and it also adopts to its macro environment consisting democratic or economic forces, political or legal forces, technological or physical forces and social or cultural forces. The bank takes into account the factors and forces in the marketing environment in developing its strategy to serve the target market.

Need for the Study

A number of studies have been conducted in India over a period of time to determine as to what are the bank customer's requirements and expectations from their banks and how far they are satisfied with their banks as regards to the quality of the service rendered. There are umpteen numbers of studies have been conducted on credit practices of commercial banks in India

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both by the RBI and Government appointed official committees, work groups and individual researchers. The under research area is 'marketing strategies of commercial banks'. Hence, the present study is a gap-filling attempt, which aims at evaluating marketing strategies adopted by commercial banks in Kadapa Corporation in particular and in India in general in providing banking financial services to the customer public.

Methodology

Marketing strategy is the firm's product-market choice which is guided by the environmental necessities and firm's objectives and capabilities. The present paper focuses on the Marketing Strategies adopted in commercial banks particularly in State Bank of India (SBI) and ING Vysya Bank (INGV Bank) (select commercial banks for the study) in Kadapa Corporation, A.P. India. The SBI has five branches, which are located in Kadapa Corporation. Among these five branches, three braches are selected for the study as select public sector banks such as SBI Main branch, SBI Yerramukkapalli branch and SBI Bazaar branch. The ING Vysya Bank has only one branch, which is located at 7 Roads is also selected for the study under select private sector bank in Kadapa Municipal Corporation.

Marketing Strategies Adopted in Commercial Banks

Product Related Strategies

The commercial banks have a very wide customer base belonging to various segments of the society. As such, a number of products are launched by the banks to meet the requirements of their customers. Schemes for children, education, women, senior citizens, individuals, NRIs, SSIs and the like are some of the products offered by the banks. Product related strategies include 'Interest based, Fee based and Technology based' strategies. 'Interest based activities strategy' includes mobilisation of deposits and advancing loans to the customers, (Philip Kotler, 1994). Under 'Fee based services strategy' the banks offer corporate advisory services, merchant banking, factoring, leasing, venture capital, housing finance, insurance and mutual funds. Moreover, the banks offer innovative technology services like ATMs, online banking, tele-banking, Internet banking, satellite banking and the like.

Table 1 depicts the 'Product related strategies' adopted in select SBI and ING Vysya bank branches in Kadapa Corporation.

Table 1: Product Related Strategies of Select Commercial Banks

S. No.	Strategy	SBI (Strategy adopted in %)	INGV Bank (Strategy adopted in %)
1.	Interest Based Activities	27	30
2.	Fee Based Activities	28	30
3.	Technology Based Activities	45	40
	Calculated 'F' Value	**3.076**	
	Level of Significance (%)	5.000	
	Degrees of Freedom (n1-1, n2-1)	2, 2	
	Critical Value of 'F'	**19.000**	

Source: Field Survey.

Among all the product related strategies, it is observed that the INGV Bank is maintaining dominating position in the case of 'Interest based and Fee based strategies', which constitutes 30 per cent each whereas in SBI they could not cross 28 per cent. But in case of technology based activities, SBI has occupied first position, which recorded at 45 per cent when compared to INGV Bank. The commercial banks are moving towards the technology based activities strategy as of the present day customers prefer the banks where in technology based services like online technology are available to reduce their risk and save the time.

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Place Related Strategies

This has resulted in a huge network of SBI and INGV Bank spread over the country. The survey revealed that these nook and corner strategies of the banks have increased the customer base, Renu Sobti (2003). Location strategy, parking place strategy and sitting facility strategy are ingredients of 'Place related strategies'. Table 2, provides the 'Place related strategies' of select commercial banks.

Table 2: Place Related Strategies of Select Commercial Banks

S. No.	Strategy	SBI (Strategy adopted in %)	INGV Bank (Strategy adopted in %)
1.	Location	55	50
2.	Parking Place	21	30
3.	Sitting Facility	24	20
	Calculated 'F' Value	**1.518**	
	Level of Significance (%)	5.000	
	Degrees of Freedom (n1-1, n2-1)	2, 2	
	Critical Value of 'F'	**19.000**	

Source: Field Survey.

'Location strategy' is given due consideration for opening up of a new branch by select commercial banks. In other words, SBI has preferred 'Location strategy' at 55 per cent while other strategies like 'Parking place and Sitting facility' are given 45 per cent only. About 50 per cent to 'Location' and remaining 50 per cent to 'Parking place' and 'Sitting facility' strategies in INGV Bank. 'Parking place strategy' will be given next to location strategy in the case of INGV Bank. It may be observed that, as the number of customers is more in SBI, it is difficult to provide the facilities like 'Sitting and Parking place strategies'. So they give less importance to 'Parking place strategy' and 'Sitting facility strategy'.

Promotion Related Strategies

Promotion related strategies comprise of 'Marketing division strategy, Advertising media strategy, Social activities strategy and Branding strategy'. The banks have been found in 'Social activities' like maintenance of roundabouts, Sangeetha Arora (2005), organising free medical and awareness camps and charities and free educational facilities for the poor students and for not only help in the civic improvement of the town but also help in promoting the bank. Table 3 depicts 'Promotional related strategies' in select commercial banks in Kadapa town.

Table 3: Promotion Related Strategies of Select Commercial Banks

S. No.	Strategy	SBI (Strategy adopted in %)	INGV Bank (Strategy adopted in %)
1.	Marketing Division	40	30
2.	Advertisement Media	28	40
3.	Social Activities	23	10
4.	Branding	9	20
	Calculated F Value	**1.012**	
	Level of Significance (%)	5.000	
	Degrees of Freedom (n1-1, n2-1)	3, 3	
	Critical Value of 'F'	9.280	

Source: Field Survey.

It is observed that, among all the 'Promotion related strategies', the SBI espouses more on marketing division strategy at 40 per cent and the INGV Bank promotes more on 'Advertisement media strategy' at 40 per cent. The 'Branding strategy' has not been adopted much in SBI since it is a well established and the oldest bank in Kadapa Municipal Corporation. The 'Social activities strategy' has not been well adopted in INGV Bank. It is a private sector commercial bank concentrates on profit and not on the service.

Price Related Strategies

Price related strategies comprise 'Strategic pricing strategy, Pricing approach strategy and Price privileges strategy'. The prime lending rates are fixed by Commercial banks with the guidance of RBI, (Srinivasan, 2005). 'Strategic pricing option strategy' considers 'builds volume and market share, prevents competition from entering, builds up image and maximises profits strategies'. 'Cost based, Market based and Target based pricing strategies' are represented under 'Pricing approach strategy'. The SBI deals with the masses and social welfare is one of its motives.

Table 4 presents the 'Price related strategies' in select commercial banks in Kadapa Corporation. The banks have adopted the strategic pricing option is the one which builds volume and market share. 32 per cent of the 'Price related strategies' correspond to 'Strategic price strategy' (a type of price related strategy) adopted by the SBI whereas the INGV Bank adopts this strategy with 35 per cent in total 'Price related strategies' to increase the market size in Kadapa Corporation. No cost based and target based pricing strategies are adopted by SBI, as the RBI guides the bank in fixing the prices for its products whereas the INGV Bank considers 20 and 10 per cent of 'Pricing strategies' as the 'Cost based and Target based pricing strategies' respectively to attract the customers. The SBI adopts 58 per cent of 'Price related strategies' as 'Market based pricing strategy' to fix the prices to its products by the RBI. 'Market based price strategy' registered at 35 per cent of 'Price related strategies' in INGV Bank. The SBI charges low prices to its customers than the INGV Bank. In addition to these, SBI further, implements the market based pricing approach and the INGV Bank adopts cost, market and target based pricing approaches for their financial services in Kadapa corporation.

Table 4: Price Related Strategies of Select Commercial Banks

S. No.	Strategy	SBI (Strategy adopted in %)	INGV Bank (Strategy adopted in %)
1.	Strategic Pricing Option	32	35
2.	Pricing Approach		
	• Cost Based	NA	20
	• Market Based	58	35
	• Target Based	NA	10
3.	Price Privileges	10	NA
Calculated 'F' Value		**2.619**	
Level of Significance (%)		5.000	
Degrees of Freedom (n1-1, n2-1)		4, 4	
Critical Value of 'F'		**6.390**	

Note : Not Adopted.

Source: Field Survey.

People Related Strategies

'People related strategies' have a huge workforce manning the extensive network in the country. This massive manpower results in structural and managerial impediments and refutes the popular belief of the public sector banks is that the *'larger the number of employees better serve the customers'* Sadhak, H. (1998). People related strategies are pertaining to well versed with computers and training programmes to employees. Table 5 refers the people related strategies in select commercial banks in Kadapa Corporation.

Table 5: People Related Strategies of Select Commercial Banks

S. No.	Strategy	SBI (Strategy adopted in %)	INGV Bank (Strategy adopted in %)
1.	Well Versed with Computers	11	60
2.	Training Programmes pertain to:		
	• Interpersonal Skills		
	• Academic Refresher Courses	15	5
	• Awareness Regarding Job Activities	5	5
	• Moral and Ethical Values	16	10
	• Staff Customer Relationship Building	16	10
		37	10
Calculated 'F' Value		**3.900**	
Level of Significance (%)		5.000	
Degrees of Freedom (n1-1, n2-1)		5, 5	
Critical Value of 'F'		**5.050**	

Source: Field Survey.

It is obvious that the 'People related strategies' denote 'well versed strategy' at 60 per cent is adopted by INGV Bank. This strategy constitutes 11 per cent in SBI. The reason being that the employees of SBI are recruited on permanent basis even if they don't have well awareness with the computers. The private sector banks have recruited their staff with utmost care and diligence. Training is a developmental activity in any organisation to develop the performance of the employees and quality of the service or product. The SBI invests heavily on training programmes to improve their skills. Though training is a regular feature in SBI, yet it fails to produce fruitful results. The survey of SBI has reveals that the major emphasis on such training processes to improve interpersonal skills, conducting academic refresher programmes to improve interpersonal skills, conducting academic refresher courses, providing an awareness regarding job activities, giving knowledge about moral and ethical values to its employees and building staff-customer relationships. Most of the strategies hold to SBI is 'Staff-customer relationship building strategy' at 37 per cent and other strategies are more or less 10 or 20 per cent of all the 'People related strategies'. But the INGV Bank is 'Well versed with computers strategy' and other strategies related to less than or equal to 10 per cent of all 'People related strategies' in Kadapa Corporation.

Physical Evidence Related Strategies

The concept of marketing involved in physical evidence has assumed significance recently. The physical evidence refers to physical environment, facilities, the branch decors, excellent furnishings, spacious layouts and atmosphere. Appearance of the employees is also an important physical evidence of any bank. This could be explained by a number of factors in the banks. They are well location, pleasant appearance and systematic branch layout.

The 'Physical evidence related strategies' of select commercial banks are shown in Table 6. It is evident that the SBI (www.statebankofindia.com) has more than one branch spread over a large geographical area in Kadapa Corporation. The SBI has dominated in 'Branch location at strategic place' and it is registered at 45 per cent of 'Physical evidence related strategies'. INGV Bank adopts at 35 per cent of all the 'Physical evidence related strategies' as 'Branch location at strategic place'. The INGV Bank makes a lot of efforts in tangibilising the services they offer. 'Pleasant appearance strategy' registers 30 per cent of 'Physical evidence related strategies' in the sense of INGV Bank. But the SBI implements 'Pleasant appearance strategy' at 25 per cent of 'Physical evidence related strategies'.

Table 6: Physical Evidence Related Strategies of Select Commercial Banks

S. No.	Strategy	SBI (Strategy adopted in %)	INGV Bank (Strategy adopted in %)
1.	Branch location at strategic place	45	35
2.	Pleasant appearance	25	30
3.	Systematic Branch layout	30	35
Calculated 'F' Value		1.020	
Level of Significance (%)		5.000	
Degrees of Freedom (n1-1, n2-1)		2 2	
Critical Value of 'F'		19.000	

Source: Field Survey.

The INGV Bank has occupied top position in adopting 'Systematic branch layout' strategy registered at 35 per cent of all the 'Physical evidence related strategies' and it is less in SBI, recorded at 30 per cent of all 'Physical evidence related strategies'. The employees of SBI generally represent a harassed, overworked and an irritated disposition. The staff of the INGV Bank with their 'May I help you' attitude is the most inviting feature of this bank. Of all the 'Physical evidence related strategies', the SBI is more evinced on 'Branch location at strategic place'. It might be due to the reason that it has more number of branches in Kadapa town than the INGV Bank. But the INGV Bank is taking up the 'Pleasant appearance strategy' and 'Systematic branch layout strategy' than SBI. However, all the strategies would differ more or less in percentage terms in select commercial banks.

Processes Related Strategies

'Processes' refer to the actual procedures, mechanisms, and flow of activities by which the service is rendered. 'Processes related strategies' are classified into different categories. They are strategies based on 'Market processes, Customer processes and Operational processes'.

Market Processes Strategies

'Market processes strategies' includes 'Marketing representatives strategy, Kind of information required from marketing research strategy and Reduce price strategy'. Marketing research strategy carries out a research to identify customer groups and their requirements. Another important strategy of market process strategies is 'Reduce price to increase business strategy'. Table 7 infers 'Market processes strategies' in select Commercial Banks.

Table 7: Market Processes Strategies of Select Commercial Banks

S. No.	Strategy	SBI (Strategy adopted in %)	INGV Bank (Strategy adopted in %)
1.	Marketing Representatives	16	30
2.	Kind of information required from market research: • General Market Data	18	20
	• Identifying Customer Groups	29	30
	• Understanding Customer Requirements	26	20
3.	Reduce Price to Increase Business	11	NA
	Calculated 'F' Value	**2.750**	
	Level of Significance (%)	5.000	
	Degrees of Freedom (n1-1, n2-1)	4, 4	
	Critical Value of 'F'	**6.390**	

Note : NA stands for Not Adopted.
Source: Field Survey.

INGV Bank (www.ingvysyabank.com) has a dominating position in adopting the 'Marketing representatives strategy'. It comprises 30 per cent of all the 'Market processes strategy' whereas the SBI has implemented the strategy only at 16 per cent. It is due to the fact that marketing manager in SBI undertakes marketing aspects through its employees not with the representatives. In the case of SBI, 'General Market Data' strategy holds 18 per cent, 29 percent 'Identifying Customer Groups' strategy and 26 per cent 'Understanding Customer Requirements' strategy of all the 'Market processes strategies'. The INGV Bank adopts these strategies in the proportion of 20 per cent as 'General market data strategy', 30 per cent as 'Identifying customer groups' and only 20 per cent as 'Understanding the customer requirements strategy' of all the Market process strategies as 'Kind of information required from market research strategies'.

The SBI adopts the strategy of 'Reduce price to increase business strategy' in some times whereas the INGV Bank does not follow this strategy. The reason is that profit earning is the motto of private sector banks. It may be said that the SBI concentrates on 'Identifying customer groups strategy' amongst all other 'Market process strategies' while INGV Bank on both 'Marketing representatives strategy and Identifying customer groups strategy' in Kadapa Corporation.

Customer Processes Strategies

The second strategy of 'Processes related strategies' is based on the customers. They consist of 'Bank-customer meets strategy, Focus of customer needs strategy, Customer complaints pertaining to the behaviour of bank staff and delay in service rendered strategy and Single window service strategy' (www.flipkart.com/marketing-strategy-indian).The Customer processes strategies of select Commercial Banks in Kadapa town are depicted in Table 8.

The SBI adopts 'Banker–customer meet strategy' representing 21 per cent of 'Customer processes strategies whereas this strategy is adopted by INGV Bank at 40 per cent. Of all the customer processes strategies, SBI concentrates on 'Focusing customer needs strategy' at 23 per cent while INGV Bank at 50 per cent. The customer complaints pertaining to the behaviour of the bank staff and delay in services are more in SBI when compared to INGV Bank. It is elicited that the polite behaviour of the staff with its customers is found in INGV Bank. The SBI provides Single window service to its customers successfully, registering 44 per cent. INGV Bank does not offer such service in Kadapa Corporation. Chart 5.8 shows strategies based on the customer processes in select commercial banks.

Table 8: Customer Processes Strategies of Select Commercial Banks

S. No.	Strategy	SBI (Strategy adopted in %)	INGV Bank (Strategy adopted in %)
1.	Banker-Customer Meets	21	40
2.	Focus of Customer Needs	23	50
3.	Customer Complaints	12	10
4.	Single Window Service	44	NA
Calculated 'F' Value		**3.091**	
Level of Significance (%)		5.000	
Degrees of Freedom (n1-1, n2-1)		3, 3	
Critical Value of 'F'		**9.280**	

Note : NA stands for Not Adopted.
Source : Field Survey.

Operational Processes Strategies

'Systematic computerisation strategy, Officer/ Employee call programmes strategy, issuing bank brochures and providing employees work over time strategy' are included in 'Operational processes strategies' (www.bus.bton.ac.uk/eaces/papers/1f1.pdf). Strategies of 'Operational processes in select commercial banks' are shown in Table 9. It is apparent that the SBI implements 'Computerisation strategy' in its premises recording at 46 per cent whereas the INGV Bank adopts this strategy at only 40 per cent in Kadapa Corporation. The INGV Bank has occupied top position in adopting 'Officer/Employee call programmes strategy' at 40 per cent of 'Operational processes strategies'. In the case of SBI, it registered at only 24 per cent. The friendly nature of the manager with his employees in INGV Bank is the reason for the higher percentage of adopting this strategy.

Table 9: Operational Processes Strategies of Select Commercial Banks

S. No.	Strategy	SBI (Strategy adopted in %)	INGV Bank (Strategy adopted in %)
1.	Systematic Computerisation	46	40
2.	Officer/Employee Call Programmes	24	40
3.	Bank Brochures	30	20
4.	Have Employees Work Over-Time	NA	NA
Calculated 'F' Value		**1.010**	
Level of Significance (%)		5.000	
Degrees of Freedom (n1-1, n2-1)		3, 3	
Critical Value of 'F'		**9.280**	

Note : NA stands for Not Adopted.
Source: Field Survey.

Further, it is observed that SBI has adopted more 'Systematic computerization strategy' among all other 'Operational processes strategies' (www.uniraj.ernet.in/syllabi/MIB/MIB.html). It may be said that it has number of branches in the town operated with online technology and also to provide service with very fast to its large number of customers in Kadapa town. Of all the 'Operational processes strategies' INGV Bank has adopted more strategies like, 'Systematic computerisation and Officer/Employee call programmes' because of single branch and less number of employees in branch.

Recommendations and Suggestions

The recommendations and suggestions outlined below, if considered and implemented would surely facilitate better customer orientation and improve the operational efficiency in terms of formulating and implementing marketing strategies of select Commercial Banks in Kadapa Municipal Corporation, A.P. in particular and other commercial banks in general.

- The select banks shall improve 'interest based strategies' to attract deposits and to sanction loans. Both select commercial banks should adopt more 'fee based strategies' to improve merchant banking facilities, advisory services, leasing facilities and mutual fund services.
- SBI has to concentrate more on 'advertisement media strategy' and 'branding strategy' while launching the products into the market.
- SBI shall price its products not only by implementing 'Market based pricing approach' but also through cost based and target based approaches.
- The training method of 'job rotation' should be implemented in the banks, so that the employees can undertake different tasks (www.asiacase.com/ecatalog/.../page-STRA). Even in the absence of one employee, the other employee can handle that work. The employees of the banks shall be counseled in order to receive and respond the customers properly
- SBI should improve appearance and systematic branch layout to provide pleasant atmosphere in the bank. INGV Bank should increase its branches in the town by adopting 'branch location at strategic place strategy'.
- Single window service strategy shall be implemented in INGV Bank to provide assistance to small investors in Kadapa Municipal Corporation. 'Moral and ethical values strategy' should be adopted in both the select banks to treat customer better and soft lines.

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New Insights into the Impact of Futures and Options Trading on the Underlying Spot Market Volatility in India

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Indian capital market saw the launching of index futures and options on NSE on June 12, 2000 and June 4, 2001 respectively.This launching of futures and options in Indian stock markets was perceived to increase volatility in the stock market by some researchers, while other researchers anticipated decline in volatility. So far, studies have examined volatility implication in macro-level, that is, they measured volatility reduction by comparing volatility of pre and post derivatives period, using various models. This paper tries to study in micro-level, how as to the volatility implications are there across the days of the week in post futures and options period in Indian stock market by isolating volatility related to market-wide factors as well as international-wide factors This paper also examines the nature of the volatility after the introduction of futures and options contracts. The study has been undertaken with a comprehensive daily data set of S&P CNX Nifty, Nifty Junior and S&P 500 index from October 4, 1995 to May 31, 2007, and to measure the volatility GARCH (1, 1) model has been used. The results of the study show that the presences of derivatives markets on S&P CNX Nifty have declined the volatility marginally and volatility implication in days of the week as a consequence of derivatives introduction revealed the presence of speculative activities in spot as well as derivatives market. And, further results show that options market reduce volatility and stabilize underlying spot market marginally more than futures market.

***Keywords:** Futures, Options, Volatility, Heteroskedasticity, GARCH*

Introduction

In the wake of liberalization and globalization of the Indian capital market, particularly the financial sector, has witnessed a major transformations and structural changes. The major objectives of these reforms brought in have been, to improve market efficiency, enhancing transparency, checking unfair trade practices, and bringing up the standard of Indian capital market to international level. The reforms have brought in several changes in the operations of the secondary markets, such as, automated on-line trading in exchanges, enabling trading terminals of the National Stock Exchange (NSE) and Bombay Stock Exchange (BSE) to be available across the country and making geographical location of an exchange irrelevant, reduction in the settlement period, and opening up of the stock markets to foreign portfolio investors etc. In addition to these developments, India became one of the forerunners among the emerging markets in South Asian region to introduce derivative products on two of its principal existing exchanges viz., BSE and NSE in June 2000 to provide tools for risk management to investors.

Derivatives are financial instruments that are linked to a specific financial instrument or indicator or commodity and through which specific financial risk can be traded in their own right. The value of a financial derivative derives from the price of an underlying item, such as an asset or index. Unlike debt securities, no principal is advanced to be repaid and no investment income accrues (IMF). Derivatives includes futures, forwards, options and swaps, and these can be combined with each other or traditional securities and loans to create hybrid instruments. These instruments are used for risk management by hedging i.e. taking opposite position in the futures market.

Before the introduction of derivatives, there had been a considerable debate on the question as to whether derivatives should be introduced in India or not. Finally L.C. Gupta Committee on Derivatives, which examined the whole issue in details, recommended in December 1997, the introduction of stock index futures However the preparation of regulatory framework for the operations of the index futures contracts took another two and a half-year more, as it required not only an amendment in the Securities Contracts (Regulation) Act, 1956 but also the specified regulations for such contracts. Finally, the Indian capital market saw the launching of index futures on June 9, 2000 on BSE and on June 12, 2000 on NSE.

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A year later, options on index were also introduced on June 4, 2001 for trading on these exchanges.

The spot and derivatives markets provide investors with an opportunity to trade in the same underlying security. It is quite logical, therefore, to anticipate a trading induced dynamic relationship between the two markets. There are several ways in which opening of the derivatives trading can increase efficiency and smoothen price variations in a cash market and the interrelatedness of the two markets suggests that speculation in the derivatives market destabilizes prices in the spot market. In particular, How the derivatives trading in India is impacting the volatility of the underlying cash market is a question of high significance as high volatility can steal the investors a substantial part of total value of his portfolio.

Against this background, this paper tries to examine whether the Indian stock markets show some significant change in the volatility after the introduction of Futures and Options trading. This paper also tries to examine the volatility implications of spot market in days of the week and the nature of the volatility after the introduction of futures and options contracts. The rest of the paper is divided as follows. Section 2 deals with review of previous studies. Section 3 talks about the research methodology used in this paper. Section 4 discusses the empirical analysis. Finally, section 5 provides conclusion.

Review of Literature

Both theoretical and empirical studies were carried out to evaluate the impact of listing of futures and options on the cash market. Two Propositions concerning the impact of derivatives trading on the spot market are prevalent in the literature. Proposition of 'destabilizing forces' argue that derivatives trading increases stock market volatility because of having high degree of leverage, expected presence of uninformed traders due to low transactions cost involved to take position in the futures market and the availability of lower level information of derivatives traders with respect to cash market traders is likely to increase the asset volatility. Stein (1987) futures market improves risk sharing and therefore reduces price volatility and if the speculators observe a noisy but informative signal, the hedgers react to the noise in the speculative trades producing an increase in volatility. Cox, 1976; Figlewski, 1981; Harish, 1989; Kamara et al., 1992; Antoniou and Holmes, 1995 and Chatrath et al., 1995, found results supporting this Proposition.

On the other hand, Proposition of 'market completion' argue that derivatives trading helps in price discovery, improve the overall market depth, enhance market efficiency, supplement market liquidity, reduce asymmetric information and thereby reduce volatility of the cash market. Denthine, 1978; Kumar et al., 1995, Antoniou et al., 1998; found results supporting this proposition.

Bolonga and Cavallo (2002) examined the stock market volatility in the post derivative period in the context of Italian stock exchange. They employed Generalized Autoregressive Conditional Heteroscedasticity (GARCH) class of models and to account factors other than derivatives trading the GARCH model was computed after adjusting the stock return equation for market factors proxied by an index on which derivatives products are not available.

In Indian context, studies by Thenmozhi, 2002; Nath, 2003; Bandivadekar et al., 2003 and Thenmozhi *et al.*, (2004) reported decline in volatility while Shenbagaraman, 2003; Pretimaya et al., 2007 and Sibani Prasad Sarangi et al., (2007) did not find significant impact on market volatility in India. So far in India and across the world, numerous studies have been carried out to study the impact of derivatives on spot market, but these studies concentrated only on macro level, except study by Saravanan and Malabika Deo (2009) their study examined volatility implication in days of the week after the introduction of futures trading on spot market, in other word, how volatility reduction or increase is there across the days of the week. Our earlier study did not remove international wide factors from spot market volatility and as well as we have studied only the impact of futures market. But our present study analysis the impact of Futures and Options together with controlling market wide and international wide factor in spot market.

Objective

The main objectives of the paper are cited below:

- To examine the nature and behaviour of spot market volatility after the introduction of futures contract, and

- To analysis the volatility implications of spot market in days of the week, after the introduction of futures contract.

Methodology

Data and Sample

The data for the study consist of daily closing price returns of the S&P CNX Nifty Index, Nifty Junior Index, and S & P 500. The data has taken from period of October 4, 1995 to May 31, 2007. The data for the study have been collected in order to cover pre and post derivatives period. Derivatives contract on Nifty Junior were introduced on June 2007, after that, it cannot be used as proxy for market wide factors. Hence, data have been collected upto 31st may 2007. S & P 500 have been used as a control variable to remove international market-wide influence on S&P CNX Nifty The total number of observations is 2912, out of which 1162 and 1408 were prior to futures and options trading and remaining 1750 and 1504 observations relate to post-futures and options trading respectively. This study is based on National Stock Exchange Data because 95 percent of the total trading in derivatives is done at NSE.

Data Analysis

The present research is based on the stock index price returns. The daily return based on closing price is computed using the following formula.

$$R_t = \text{Log}\,(P_t / P_{t-1}) \qquad (1)$$

Where, P_t - Log of price at time t, and P_{t-1} - Log of price at time t_{-1}

Many researchers have carried out studies to show the volatility of the spot market before and after the introduction of the derivatives trading. Some researchers like Hodgson (1991), and Thenmozhi (2002) have measured the volatility by using standard deviation. Many researchers like Antoniou and Holmes, 1995; Bandivadekar et al., 2003 and Thenmozhi et al., (2004) to overcome the problem of hetroskedasticity in the observed returns, they have used the GARCH model. The present study makes use of GARCH model to focus the volatility of the underlying market.

In order to determine whether the arrival of derivatives trading has any effect on volatility of the underlying spot market, it is necessary to separate the volatility arising from market wide factors and international wide factors other than futures trading. Earlier authors, such as, Antoniuo and Holmes, 1995; Kamara, et al., 1992 have not removed the factors which are responsible for market wide and international wide volatility by regressing the spot market returns against a proxy variable for which there was no related futures contract available. For Indian stock market, Nifty Junior Index comprises stocks for which no futures and options contracts are traded until June 1, 2007. Hence, it serves as a control variable for us to isolate market wide factors and S & P 500 have been used as a control variable to remove international market-wide influence on S&P CNX Nifty, thereby we can concentrates on the residuals volatility in the Nifty as a direct result of introduction of index derivatives contracts.

The Ordinary Least Squares Regression (OLS) assumes constant error variance, but heteroskedasticity causes the OLS estimation to be inefficient. In case of financial data large and small errors tend to occur in clusters, i.e. large returns are followed by more large returns, and small returns by more small returns. As volatility clustering is a characteristic of financial data where large changes tend to follow large changes and small changes tend to follow small changes. OLS estimation becomes inefficient to analyze the volatility in the face of such heteroskedasticity. Findings of heteroskedasticity in stock returns are well documented (Mandelbrot, 1963; Fama, 1965; Bollerslev, 1986). The presence of heteroskedasticity in the data calls for the use of ARCH family model to study volatility. Hence, this study makes use of non-linear models like ARCH.

Autoregressive Conditional Hetroscedastic (ARCH) model was first introduced by Engel (1982). And then the ARCH model was generalized by Bollerslev (1986), and it is called GARCH (Generalised Autoregressive Conditional Hetroscadasticity). GARCH models explain variance by two distributed lags: firstly, on past squared residuals to capture high frequency effects or news about volatility from previous period measured as lag of the squared residuals from mean equation, and secondly, on lagged values of variance itself to capture long-term influences. A GARCH (p,

q) model is given by the following equation.

$$Y_t = \beta_0 + \beta_1 X_1 + \varepsilon_t \quad \varepsilon t / \Psi t_{-1} \sim (0, h_t) \tag{2}$$

$$h_t = \alpha_0 + \sum_{t=1}^{p} \alpha_1 \varepsilon^2 t_{-1} + \sum_{j=1}^{q} \alpha_2 h_{t-1} + v_t \tag{3}$$

Equation (2) represents the conditional mean equation ($\mathbf{Y_t}$), is written as a function of constant ($\boldsymbol{\beta_0}$), exogenous variable ($\mathbf{X_t}$) and error term ($\boldsymbol{\varepsilon_t}$). Equation 3, represents the conditional variance equation ($\mathbf{h_t}$), is the one period ahead forecast variance. The conditional variance equation is a function of constant ($\boldsymbol{\alpha_0}$), lagged squared residual from the mean equation-ARCH ($\boldsymbol{\varepsilon^2}$ **t**$_{-1}$), lagged values of variance itself ($\boldsymbol{h_{t-1}}$) - GARCH, and $\boldsymbol{v_t}$ is white noise error term. In variance equation P is the degree of ARCH, and q is the degree of GARCH. The size of the parameters α_1 and α_2 determine the short-term dynamics of the resulting volatility time-series. Large co-efficient of α_2 shows that shocks to conditional variance take a long time to cancel out, so volatility is persistence. To measure the volatility implication of spot market on introduction of derivatives contract, in our study GARCH (1, 1) is used as mentioned in the following mean and variance equation:

$$R_t = \beta_0 + \beta_1 R_{\text{NiftyJunior}, t} + \beta_2 R_{\text{S\&P 500}, t-1} + \varepsilon t \tag{4}$$

$$h_t = \alpha_0 + \alpha_1 \varepsilon^2_{t-1} + \alpha_2 h_{t-1} + v_t \tag{5}$$

Where in equation (4), *Rt* is daily return on the S&P CNX Nifty, $R_{\text{NiftyJunior}, t}$ is daily rerun of Nifty Junior is used to eliminate the effect of market wide factors in India, and $\boldsymbol{R_{\text{S\&P 500}, t-1}}$ is lagged daily return of S&P 500 to eliminate the effect of international wide factors and thereby variance equation can able to focus only on volatility related derivatives introduction. To analyze the consequence of derivatives on spot market volatility the conditional variance equation is expanded with dummy variable $\boldsymbol{D_f}$ for futures and $\boldsymbol{D_o}$ for options. Hence equation (5) takes the following form:

$$R_t = \beta_0 + \beta_1 R_{\text{NiftyJunior}, t} + \beta_2 R_{\text{S\&P 500}, t-1} + \varepsilon t \tag{6}$$

$$h_t = \alpha_0 + \alpha_1 \varepsilon^2_{t-1} + \alpha_2 h_{t-1} + \alpha_3 D_f \tag{7}$$

$$h_t = \alpha_0 + \alpha_1 \varepsilon^2_{t-1} + \alpha_2 h_{t-1} + \alpha_4 D_o \tag{8}$$

Where in equation (7), D_f is dummy variable for future introduction which takes the value 0 for pre-futures and 1 for post-future i.e. takes the value '0' until June 11, 2000 for pre-futures period and takes '1' thereafter for post-futures period. Likewise, where in equation (8), $\boldsymbol{D_o}$ is dummy variable for option introduction which takes the value 0 for pre-options and 1 for post- options i.e. takes the value '0' until June 3, 2001 for pre- options period and takes '1' thereafter for post- options period. The Significant co-efficient of the dummy variables determine the changes in the volatility of the spot market. If they turn out to be negative, then there is a decline in the spot market volatility with the inception of the futures and options trading and vice-versa. A zero coefficients indicate no change in the volatility

After that, to examine volatility implication in days of the week after the introduction of Futures contract the variance equation takes the following form:

$$R_t = \beta_0 + \beta_1 R_{\text{NiftyJunior}, t} + \beta_2 R_{\text{S\&P 500}, t-1} + \varepsilon t \tag{9}$$

$$h_t = \alpha_0 + \alpha_1 \varepsilon^2_{t-1} + \alpha_2 h_{t-1} + \alpha_3 M^*D_f + \alpha_4 T^*D_f + \alpha_5 W^*D_f + \alpha_6 Th^*D_f + \alpha_7 F^*D_f \tag{10}$$

$$h_t = \alpha_0 + \alpha_1 \varepsilon^2_{t-1} + \alpha_2 h_{t-1} + \alpha_3 M^*D_o + \alpha_4 T^*D_o + \alpha_5 W^*D_o + \alpha_6 Th^*D_o + \alpha_7 F^*D_o \tag{11}$$

In variance equation (10&11) M, T, W, Th, and F are dummies related to Monday, Tuesday, Wednesday, Thursday and Friday respectively, these dummies are interacted with Futures/Options dummy($\boldsymbol{D_f} / \boldsymbol{D_o}$) in order to identify volatility reduction or increment in days of the week after the introduction of Futures and Options contract. As per dummy variable rule, for a group n-1 dummies must be introduced inorder to avoid dummy variable trap. In our study, we have identified few days occurrence even in non-working days, so we treat those days as one of the day for a day's group. Hence we introduced n-1 dummy variable that is 5 (6-1) dummy variable for day's group. Day dummies takes value '1' in relevant day otherwise '0' in irrelevant day, eg. Monday dummy takes value '1' in all Monday otherwise '0' across whole sample period. The co-efficient of interactive dummy variables determine the changes in the volatility of the spot market in days wise. If they turn out to be negative, then there is a decline in the spot market volatility in particular day with the inception of the futures/Options trading and vice-versa. A zero coefficients indicate no change in the volatility in particular day.

To address volatility structure and information related spot market following the introduction of derivatives trading the variance equation takes the following form:

$$R_t = \beta_0 + \beta_1 R_{Nifty\,Junior,\,t} + \beta_2 R_{S\&P\,500\,t-1} + \varepsilon t \quad (12)$$

$$h_t = \alpha_0 + \alpha_1 \varepsilon^2_{t-1} + \alpha_2 h_{t-1} + \alpha_3 \varepsilon^2_{t-1} D_f + \alpha_4 h_{t-1} D_f \quad (13)$$

$$h_t = \alpha_0 + \alpha_1 \varepsilon^2_{t-1} + \alpha_2 h_{t-1} + \alpha_3 \varepsilon^2_{t-1} D_o - \alpha_4 h_{t-1} D_o \quad (14)$$

In variance equations (13&14), to identify structural changes in volatility as consequence of introduction of futures/options, Arch and Garch term are interacted with futures dummy/options dummy. The co-efficient of interactive dummy variables determine the changes in the volatility structure. If they turn out to be negative, then there is a decline in Arch and Garch with the inception of the futures/Options trading and vice-versa. A zero coefficients indicate no change in the volatility structure.

Empirical Analysis

This paper seeks to examine the impact of introduction of derivatives mainly index futures and index options on the underlying spot index market. To test this empirically, we estimated descriptive statistics and GARCH (1, 1) model.

a) Impact of Derivatives on the volatility of underlying Nifty Index

i) Descriptive Statistics

Table 1: Returns Statistics of S&P CNX Nifty, Junior Nifty, and S&P 500

Statistics	S&P CNX Nifty	Junior Nifty	S&P 500
Mean	0.000491	0.000645	0.000332
Std. Dev.	0.015981	0.018482	0.010893
Skewness	-0.331446	-0.602510	-0.089733
Kurtosis	7.600041	7.224082	6.268523
Jarque-Bera(p- value)	0.000000	0.000000	0.000000
Sample Size	2912	2912	2912

Table 1 provides the descriptive statistics for returns of Nifty index, Junior Nifty and S&P 500. From table it is evident that all the variables are leptokurtic and jarque-Bera statistic shows that all the variables are not normal and indicate presence of hetroscedasticity.

Table 2: Descriptive Statistics for S&P CNX Nifty and Junior Nifty in different Sub-Sample Period

Period	Sample size	CNX Nifty		Junior Nifty	
		Mean	Std. Dev.	Mean	Std. Dev.
Pre-Futures	1162	0.000307	0.017975	0.000673	0.020366
Post-Futures	1750	0.000614	0.014511	0.000626	0.017123
Pre-Options	1408	7.87E-05	0.017819	0.000194	0.020818
Post-Options	1504	0.000877	0.014039	0.001066	0.015986

Table 2, provides the results of standard deviation of CNX Nifty and Junior Nifty over pre and post sub-samples period. From table it is evidenced that the volatility of CNX Nifty has come down after the introduction of derivatives. However standard deviation calculation here is based on assumption of constant variance, but this assumption of constant variance in hetrosckedastic data will encounter problem in inference. So our study uses GARCH (1,1) model to capture time varying volatility in series.

ii) Impact of Futures and Options on the Spot market Volatility

An analysis is done to explain the impact of introduction of index futures and options on the underlying spot market by using GARCH technique as mentioned in equation (6) i.e. mean equation and (7&8) i.e. variance equations. Table 3 shows results of Impact of Nifty Future and Options on the Spot Market, the coefficient of future dummy is -1.17E-06 and it is significant at 1percent level. The sign of co-efficient of the future dummy shows that the volatility of spot market declined after the inception of future contract, but it has lesser degree of reduction on underlying market.

Table 3: Impact of Nifty Futures and Options on the Spot Market Volatility (Garch 1,1)

Variable	**Futures**		**Options**	
	Co-efficient	**z-Statistic**	**Co-efficient**	**z-Statistic**
Mean Equation				
Constant	-7.49E-06	-0.049974	-8.52E-06	-0.056571
CNX Junior Nifty	0.730836**	133.5855	0.732508**	132.8593
S&P 500	0.105189**	8.966690	0.104593**	8.807168
Variance Equation				
Constant	3.56E-06**	5.194140	3.83E-06**	5.189889
ARCH 1	0.073610**	7.622910	0.070042**	7.192793
GARCH 1	0.890422**	67.28380	0.890657**	63.57159
F/O DUMMY	-1.17E-06**	-3.240710	-1.38E-06**	-3.575028
R-squared Log likelihood	0.674880 9739.151		0.674738 9740.728	

**Statistically significant at 1% level

*statistically significant at 5% level

As far as the impact of Nifty option contracts on the Spot Market volatility, the coefficient of option dummy is -1.38E-06 and it is significant at 1percent level. The sign of co-efficient of the option dummy shows that the volatility of spot market has declined after the inception of option contract, but it has lesser degree of reduction on underlying spot market.

b) Impact of Derivatives on Days of the week's Spot Market volatility

Table 4: Impact of Nifty Futures and Options on Days of the week's Spot Market volatility (Garch 1, 1)

Variable	**Futures**		**Options**	
	Co-efficient	**z-Statistic**	**Co-efficient**	**z-Statistic**
Mean Equation				
Constant	-5.32E-06	-0.035077	0.000106	0.773350
CNX Junior Nifty	0.729407**	124.6390	0.701855**	121.3074
S&P 500	0.098902**	8.170057	0.113457**	9.826460

Variance Equation				
Constant	4.07E-06**	5.464156	2.09E-05**	7.445615
ARCH 1	0.073867**	7.520378	0.150806**	8.726048
GARCH 1	0.886611**	64.65432	0.601864**	19.06291
M* D_f / M* D_o	-3.68E-06	-0.916312	2.86E-06	0.759215
T* D_f / T* D_o	-1.54E-05**	-3.884322	-2.61E-05**	-7.313537
W* D_f / W*D_o	4.29E-06	0.985945	-9.18E-06**	-2.560836
Th*D_f / Th*D_o	9.62E-05*	2.130422	1.25E-06	0.267051
F* D_f / F* D_o	-2.23E-06	0.476807	-2.96E-06	-0.639082
R-squared Log likelihood		0.676114 9745.534	0.676114 9700.007	

**Statistically significant at 1% level

*statistically significant at 5% level

Table 4 shows results of Impact of Nifty Futures and Options on the Spot Market, that is volatility reeducation or increment in the days of the week as mentioned in equation (9) i.e mean equation and (10&11) i.e. variance equations. Out of five days of the week, three days show the volatility reeducation that is Monday (-3.68E-06), Tuesday(-1.54E-05) and Friday(-2.23E-06) show reduction effect after the introduction of Futures contract on spot market, but Tuesday only shows significant and greater amount of reduction than other two days of the week. Whereas, Wednesday (4.29E-06) and Thursday (9.62E-06) show increment effect in volatility of spot market after the introduction of Futures contract, however, Thursday only shows significant and greater amount of increments than other one day of the week. Overall, the results of the Impact of Nifty Futures on Days of the week's Spot Market volatility support the volatility reduction shown in table 3, as days of reeducation and amount of reduction is higher than days of increment and amount of increment in the week after the introduction of Futures contract

As far as options market volatility reeducation in days wise is concern, three days show the volatility reeducation that is Tuesday (-2.61E-05), Wednesday (-9.18E-06) and Friday (-2.96E-06) show reduction effect after the introduction of Options contract on spot market, but Tuesday and Wednesday show significant volatility reduction than other one day of the week. Whereas, Monday (2.86E-06) and Thursday (1.25E-06) show increment effect in volatility of spot market after the introduction of Options contract, however, none of the day shows significant and greater amount of increments in a week. And these results reveal that introduction of futures and option market have reduced spot market volatility in macro level that is in post derivatives period and as well in micro level that is reduction in days wise in a week. Further, volatility increment in Thursday in post futures period shows evidence over maturity effect, whereas, volatility reduction in Thursday in post options period shows that option expiration does not have any effect on underlying on maturity.

c) Impact of Derivatives on the Volatility Structure and Information of Nifty Index

To address the change in structure of the volatility of spot market after the introduction of futures and options contracts GARCH (1, 1) model is used. GARCH equation has two effects: one is ARCH effect and second one is GARCH effect. ARCH is the coefficient of the square of the lagged error term in mean equation, and shows the effect of recent news to the market whereas GARCH is the coefficient of the lagged variance term in variance equation and captures the effect of the old news in the market.

Table 5 shows the results of introduction of futures and options over volatility structure of underlying spot market, as mentioned in variance equation (13) and (14) for futures and options respectively. The interactive dummy co-efficient of ARCH 1*D_f and GARCH 1*D_f shows - 0.013950 and -0.005789 respectively. Insignificant interactive dummy shows that there is no significant structural changes have happened in post futures period. Likewise, the interactive dummy co-efficient of ARCH $1*D_o$ and GARCH $1*D_o$ shows -0.002783 and -0.017762 respectively and this insignificant interactive dummy shows that there is no significant structural changes have happened in post options period as well.

Table 5: Impact of Nifty Futures and Options on the Spot Market Volatility Structure (Garch 1,1)

Variable	Futures		Options	
	Co-efficient	**z-Statistic**	**Co-efficient**	**z-Statistic**
Mean Equation				
Constant	-1.16E-05	-0.077098	-3.07E-06	-0.020366
CNX Junior Nifty	0.732669**	130.8517	0.732848**	131.2432
S&P 500	0.105307**	8.975706	0.105823**	8.881517
Variance Equation				
Constant	2.71E-06**	5.369277	3.03E-06**	5.523829
ARCH 1	0.072712**	6.145533	0.067354**	6.260814
GARCH 1	0.903917**	71.93263	0.904045**	71.26342
ARCH $1*D_f$ / ARCH $1*D_o$	-0.013950	-0.871221	-0.002783	-0.170073
GARCH $1*D_f$ / GARCH $1*D_o$	-0.005789	-0.432410	-0.017762	-1.293323
R-squared	0.674726		0.674710	
Log likelihood	9740.726		9741.934	

**Statistically significant at 1% level

*Statistically significant at 5% level

The overall results of the study show that introduction options and futures have significant decline effect on underlying spot market volatility with lesser degree of reduction. It seems that, introduction of futures and options have positive influence in spot market as a result of marginal reduction in speculative activity in spot market and risk sharing of derivatives market. On an average, the analysis of volatility in day's wise of the week also support volatility reduction in underlying market, as days and amount of reduction is higher than days and amount of increment in the week, after the introduction of Futures and options market. However, all the days does not show volatility reduction, this seems that introduction futures and options market induce volatility in some days as a result of speculative trading. Speculative trading is attracted due to presence of high degree of leverage and low transaction cost in derivatives market. Further, presence of futures market shows the evidence of maturity effect in underlying as a result of volatility increase in Thursday, and where as options do not have any maturity effect on underlying. And, further existence of derivatives market does not have any shift in volatility structure of underlying spot market.

Conclusions

The spot and derivatives markets provide investors with an opportunity to trade in the same underlying security. It is quite logical, therefore, to anticipate a trading induced dynamic relationship between the two markets. There are several ways in which opening of the derivatives trading can increase efficiency and smoothen price variations in a cash market and the interrelatedness of the two markets suggests that speculation in the derivatives market destabilizes prices in the spot market. So far studies have examined volatility implication in macro level, that is, they measured volatility reduction by comparing volatility of pre and post derivatives period, using various models. But, this paper tries in micro level, that is, to study how the volatility implications are there across the days of the week in post futures and options period in Indian stock market by isolating volatility related to market-wide factors as well as international-wide factors. Against this background this paper examined the impact of futures and options trading in S & P CNX Nifty on the underlying spot market using GARCH techniques.

The overall results of the study show that introduction options and futures have significant decline effect on underlying spot market volatility with lesser degree of reduction. It seems that, introduction of futures and options have positive influence in spot market as a result of marginal reduction in speculative activity in spot market and risk sharing of derivatives market. On an average, the analysis of volatility in day's wise of the week also support volatility reduction in underlying market, as days and amount of reduction is higher than days and amount of increment in the week, after the introduction of futures and options market. However, all the days does not show volatility reduction, this seems that introduction futures and options market induce volatility in some days as a result of speculative trading. Speculative trading is attracted due to presence of high degree of leverage and low transaction cost in derivatives market. Further, presence of futures market shows the evidence of maturity effect in underlying as a result of volatility increase in Thursday, and where as options do not have any maturity effect on underlying. And, further existence of derivatives market does not have any shift in volatility structure of underlying spot market.

As a whole, the presence of derivatives markets on S&P CNX Nifty have declined the volatility marginally. Volatility implication in days of the week as a consequence of derivatives introduction revealed the presence of speculative activities in spot as well as derivatives market and further results show that options market reduce volatility and stabilize underlying spot market marginally more than futures market.

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Indian Hosiery Industry: Away From the Impact of Exchange Rate Change

Amanpreet Singh

Till May 2002, non-exporting garmenting sector was reserved for SSI, while for garment exporting units there was no such restriction. India and China came out of quota on Jan 1st 2005 After quota elimination, there was huge opportunity for Indian garmenting sector to explore the world markets (Jatinder Bedi, 2009). But the performance of Chinese apparel industry was far better than Indian apparel industry In few of the hosiery products, the volume increased by 2000% and more and more orders were flowing to China. U.S and EU textile industry started facing crisis. After a series of negotiations, quota was re-imposed on China for another four years till 31st December 2008 (Dong Shen, 2008) China has pegged exchange rate system while India has managed float rate system Exchange rate plays an important role export performance of a country India has experienced significant fluctuation in last few years. Indian hosiery sector has grown over the period but the growth is not consistent as it was expected There could be various reasons associated to this. Indian infrastructure, technology level and capacities are primary reasons. Exchange rate risk is another major risk which is not controllable and exporters are not taking any risk coverage to protect their receipts. In this paper, an attempt has been made to achieve the following objectives: (i) To analyze the growth and performance of Indian hosiery sector (ii)To analyze the effect of exchange rate on export performance of hosiery industry. (iii)To predict the growth of hosiery sector in next four years

Research methodology used is the data collection from various authenticated sources and analyzing it with the help of appropriate statistical tools Time period of study is April 2001 to March 2009

Keywords: *Hosiery, Quota, Exchange Rate, Export Performance, Pegged Exchange Rate, Managed Float Rate*

Introduction

On 1st January 2005, quota was removed from textile and clothing sector and developing nations specially India and China were supposed to be the major gainer from this opportunity. Textile and clothing trade was governed by Multi Fiber Agreement (MFA) since 1962 (Pankaj Chandra, 2006). The opportunity is huge and competition is also tough specifically from China and other low cost producing countries like Pakistan, Thailand, Indonesia, Bangladesh and Sri Lanka. India is primarily a cotton textile producing country while China is largest producer of Cotton textiles and also manufacturer of synthetic or Man Made Fiber (MMF) textile products in huge quantity and variety.

Textile and clothing used to be labour intensive industry but with increasing role of accessories, seasonal fashion trends and with shifting of industry from US and EU to developing nations, the demand of these products has increased from developing nations, which has created requirement for capacity expansion, skills and technological upgradation. Three factors play very important role in exports of textile and clothing industry as a whole:

(i) Technology and Capacities
(ii) Cost of capital
(iii) Exchange rate

To avail the benefit of opportunity available after quota elimination, the modernization of methods of production was must. For the purpose of up-gradation of technology, Government of India launched Textile Up-gradation Fund Scheme in year 1999 initially for five years only but later on it was extended many times and now extends up to 2012 (Jatinder Bedi, 2009). The scheme was intended to modernize the textile and clothing industry and to compensate for the global disadvantages faced by Indian textile and clothing industry in the fields of power, transaction cost and infrastructure. Under TUFS, along with interest subvention, foreign currency risk is also covered. Also, it covers almost the complete textile and clothing industry including MMF and non-woven and more than 70% of the beneficiaries under TUFS belong to small scale industries. Also, under TUFS, Government has provided an additional incentive of 10% capital subsidy over and above the 5%

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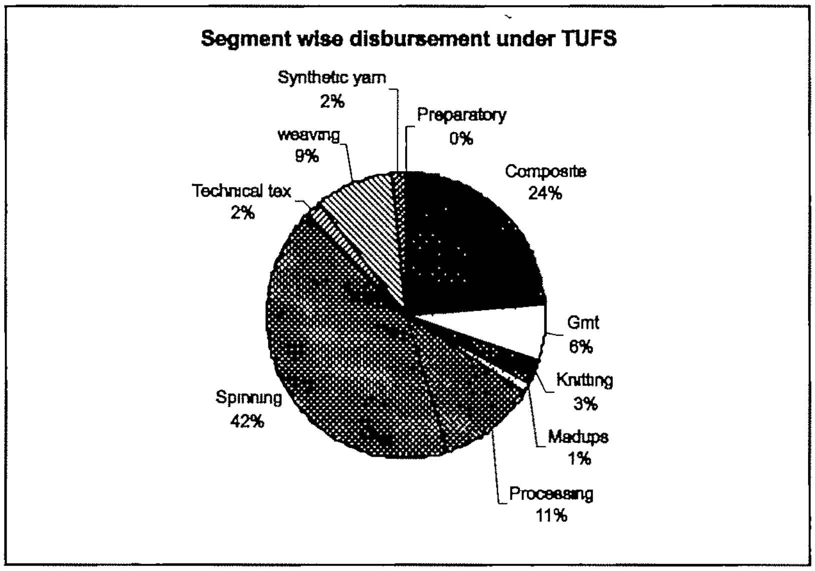
interest subsidy under TUFS for the specified textile processing machinery. The motive of various benefits or sanctions is to bring down the cost of fund in the range of 7-8% for textile mills, while the actual cost of fund or interest rate is about 13-14%.

Annexure 1A gives the amount sanctioned and disbursed to various segment. It can be seen that the spinning sector had been the most beneficial segment and knitting or hosiery segment is not benefited to the extent. From Annexure 1A, we can see that till September 2009, total sum of Rupees 59.03889 billion were disbursed and spinning sector got the major share from it. 24.93592 billion rupees (approx. 42.24%) was disbursed to spinning sector while knitting sector got only 1.7381 billion rupees (approx 2.94%). Other major gainers are composite mill sector, processing and garmenting sector. The reason for knitting sector to be one of laggards is the reservation of non-export sector reserved for small scale sector. Also, my primary study done on Ludhiana hosiery cluster indicates that hosiery industry has shown haphazard growth, which mean no planned mode of expansion. Based on the orders in hand, machines are procured to fulfill the orders and also the amount is not very high because of fragmented buying.


Segment wise disbursement under TUFS

Textile sector is considered to be very sensitive to exchange rate. Generally weak domestic currency is desirable by exporters. In India, through managed float exchange rate system, RBI intervenes as and when required. The rupee is allowed to fluctuate within certain range and as it breaches its boundaries on either side, RBI intervenes and buys or sells dollars to stabilize the rupee. Textile and clothing sector plays a very important role in Indian economy. It is fourth largest foreign exchange earner after Gem and Jewellery, Petroleum and Engineering goods. Indian government can not ignore the interest of textile and clothing exporters (El Sayed, 2006). So exchange rate is tried to keep stable and in favour of exporters.

Indian hosiery export cluster are located in Tirupur and Ludhiana. Tirupur is the capital of India's hosiery export and Ludhiana is second to it and is known for high value added products specially woolen and acrylic winter wear products. Both of these markets cater domestic and export markets. Kanpur is another city of hosiery products but known for low end and basic products like underwear and under vests but meant for domestic market (Jatinder Bedi, 2009).

In this paper an attempt is made to achieve the following objectives:

(i) To analyze the growth and performance of Indian hosiery sector.

(ii) To analyze the effect of exchange rate on export performance of hosiery industry.

(iii) To predict the growth of hosiery sector in next four years.

Research Methodology

Time period of Study: 1st April 2001 to 31st March 2009

Data Collection : Systematically secondary data from reliable sources like office of Director General of Foreign Trade, special report prepared by National Council of Applied Economic Research (NCAER), New Delhi and Annual Industry Surveys done by The Hindu.

Data Analysis : The data analysis and interpretation is done with the help of SPSS and MS Excel software.

Hypothesis1:

Null Hypothesis: Ho(a) - There is significant increase in export performance of hosiery industry in post quota regime i.e. between 2001-05 and 2005-09 (Piyush Pandey, 2003).

Alternate hypothesis: H1(a) – There is no significant growth in hosiery exports in post quota regime.

Hypothesis 2:

Null Hypothesis Ho(b): There is no significant change in exchange rate between pre-quota elimination and post quota elimination period

$\mu 1=\mu 2$

Alternate Hypothesis H1(b): There is significant change in exchange rate between pre-quota elimination and post quota elimination period

$\mu 1\neq\mu 2$

Hypothesis 3:

Null Hypothesis Ho(c): there is no linear relationship between exchange rate and export performance of hosiery industry.

$\beta\neq 0$

Alternate hypothesis: H1(c) – There is linear relationship between exchange rate and export performance.

$\beta\neq 0$

Chapter 61 of ITC (HS) Classification of Export Import Items covers all hosiery products under the scope of study. The Chapter 61 i.e. Articles of Apparel and Clothing Accessories, Knitted or Crocheted. All of these items are called hosiery items in general terms. All hosiery items are further classified in 17 categories ranging from 6101 to 6117. The details of all the items are given in Annexure 2A.

Table 1 gives the export values of hosiery items i.e. as given in Chapter 61 of ITC (HS) during pre-quota and post quota regime.

Table 1: Export Performance of Overall Hosiery Industry Before and After Quota Elimination

Year	Exports in during pre-quota regime (INR Million)	Year	Exports in during pre-quota regime (INR Million)
2001-02	88898.35	2005-06	141282.339
2002-03	115502.99	2006-07	163717.152
2003-04	124148.93	2007-08	172064.482
2004-05	118676.99	2008-09	194142.5

Source: http://dgft.delhi.nic.in/

We compare the performance with application of 't' test. The outcome of test is as given in Table 2.

Table2:'T' test for Comparing Means to Check Hypothesis

	Variable 1	Variable 2
Mean	111806 8268	167801.6183
Variance	245995886	477323031.7
Observations	4	4
T Stat	-8.522953242	
P(T<=) one-tail	0.001696506	
T Critical one-tail	2.353363435	
P(T<=) two-tail	003393012	
T Critical two-tail	3 182446305	

Source: Authors' own

From Table 2, we can also see that the value of t-stat i.e.-8.52 lies out side value of ± t-critical two tail i.e. ±3.18, which means null hypothesis Ho(a) can be rejected and alternate hypothesis H1(a) can be accepted. Also two tail value of 'P' obtained is 0.003 which is less than 0.05 or 5% significance level. Thus we have significant evidence to reject null hypothesis or we tried our level best but failed to reject alternate hypothesis. Hence there has been no significant increase in hosiery in post quota regime.

The INR/US$ exchange rate table during the period of 2001-09 is given in Table 3.

Table 3: Historical INR/US$ Exchange Rate from 2001 to 2009

Year	2001-02	Year	2002-03	Year	2003-04	Year	2004-05	Year	2005-06	Year	2006-07	Year	2007-08	Year	2008-09
Apr-01	46 7886	Apr-02	48 9395	Apr-03	47 3909	Apr-04	43.8918	Apr-05	43 6465	Apr-06	44 8245	Apr-07	40.0176	Apr-08	39.9668
May-01	46 9473	May-02	49.0168	May-03	47.1100	May-04	45 1755	May-05	43 4095	May-06	45 2226	May-07	40.5561	May-08	41 8814
Jun-01	47 0424	Jun-02	48.9840	Jun-03	46 6995	Jun-04	45 5027	Jun-05	43 5245	Jun-06	45 8886	Jun-07	40.5905	Jun-08	42.7633
Jul-01	47 1781	Jul-02	48 7877	Jul-03	46 2200	Jul-04	46.0557	Jul-05	43 4348	Jul-06	46 3675	Jul-07	40 2800	Jul-08	42.7230
Aug-01	47 1643	Aug-02	48 6138	Aug-03	45 9557	Aug-04	46.3220	Aug-05	43.5500	Aug-06	46 4461	Aug-07	40 6791	Aug-08	42 9248
Sep-01	47 7374	Sep-02	48 4625	Sep-03	45.8467	Sep-04	46 0548	Sep-05	43 8445	Sep-06	46.0281	Sep-07	40 1735	Sep-08	45 4264
Oct-01	48 0441	Oct-02	48.3882	Oct-03	45.4036	Oct-04	45 7355	Oct-05	44 7357	Oct-06	46.3582	Oct-07	39 3661	Oct-08	48 6196
Nov-01	48 0405	Nov-02	48 2845	Nov-03	45.5544	Nov-04	45 0358	Nov-05	45 6377	Nov-06	44 7209	Nov-07	39 3168	Nov-08	48 7905
Dec-01	47.9345	Dec-02	48.1495	Dec-03	45 5741	Dec-04	43 8470	Dec-05	45.5427	Dec-06	44.4781	Dec-07	39 3752	Dec-08	48 4804
Jan-01	48 3543	Jan-02	47 9571	Jan-03	45 4560	Jan-04	43 6150	Jan-05	44 2324	Jan-06	44 2117	Jan-07	39 2704	Jan-08	48.7326
Feb-01	48 7168	Feb-02	47 7474	Feb-03	45 2726	Feb-04	43.5758	Feb-05	44 2284	Feb-06	44.0120	Feb-07	39 6724	Feb-08	49 1914
Mar-01	48 7667	Mar-02	47 6767	Mar-03	44 9693	Mar-04	43.5861	Mar-05	44.3378	Mar-06	43.7936	Mar-07	40 1452	Mar-08	51 2062
Avg.	**47.7263**		**48.4173**		**545.9544**		**44.8665**		**44.177**		**45.196**		**40.1202**		**45.8922**

Source. www.x-rate.com

't' test may be used to check the significance of exchange rate difference before and after quota elimination, we get the results as given below·

Table 4: t-Test: Paired Two Sample for Means

	Variable 1	Variable 2
Mean	46.74110833	43.84636875
Variance	2.597427702	8.812729499
Observations	48	48
t Stat	6.074364824	
P(T<=t) one-tail	1.03851E-07	
t Critical one-tail	1.677926722	
P(T<=t) two-tail	2.07703E-07	

Source: Authors' own

From Table 4, we can see the values of 't' critical and 't' stat. The value of 't' stat i.e. 6.0743 lies out side ± t critical i.e. 2.0117. Hence we can reject the null hypothesis Ho(b) and can accept the alternate hypothesis H1(b). There is significant change in USD/INR exchange rate during pre-quota and post quota regime. Also p value (two-tail) is very small (0.000000207), which is significant at 5% significance level or 95% confidence level for 47 or (n-1) degree of freedom. We have enough evidence to reject the null hypothesis Ho (b) and accept the alternate hypothesis H1(c).

Table 5: Exchange rate Vs. Export Performance in Value terms

Year	Export value in Billion Rupees	Avg. INR/US$ Exchange Rate
2001-02	88.90	47.73
2002-03	115.50	48.42
2003-04	124.15	45.95
2004-05	118.68	44.87
2005-06	141.28	44.18
2006-07	163.72	45.20
2007-08	172.06	40.12
2008-09	194.14	45.89

Source: http://dgft.delhi.nic.in/

Table 5 gives the annual average exchange rate, value of exports in billion rupees and volume of export in hundred million pieces. Hypothesis Ho(c) can be tested with regression analysis, where in dependent variable 'Y' is value of expert performance from

2001-02 to 2008-09 and independent variable 'X' is INR/US$ exchange rate.

Table 6: Outcome of Regression Analysis

Multiple R	0.553098
R Square	0.305917
Adjusted R Square	0.190236
Standard Error	31.2479
Observations	8
Degree of Freedom	6
Intercept "a"	484.0994
Coefficient "b"	-7.60117
"t" Stat	-1.62619
Significance – p value	0.155034

Source: Authors' own

From Table 6, we can see the results of regression analysis. We can see that the value of 't' statistics received is -1.62619. From 't' table, the critical Value of 't' for 6 degree of freedom (N-2) with $\alpha = 0.05$, we get the value of t-critical equal to 2.4469. The value of 't' critical is more than value of 't' statistics, thus we have significant evidence to accept the null hypothesis Ho(c) i.e. there is no linear relationship between export performance and exchange rate. Also, p value is above 0.05 level of significance. We have enough evidence to accept the null hypothesis.

There is weak correlation between export performance and exchange rate because the value of coefficient of correlation is 0.553098. Also, these regression results can be interpreted as under:

$R^2 = 0.305917$ which means, only 30.59% variation in 'Y' is explained by 'X'.

The regression equation can be written as:

Regression equation can be written as Y = 484.10 -7.60117X

Where a = 484.10 and b= -7.60117

Growth and Performance of Hosiery Industry

Annexure 3-A shows the overall performance of hosiery industry since 2001-02 to 2008-09. The hosiery industry has grown at the average rate of 11.85% annually. Highest growth is shown in year 2002-03 with the growth of 29.93% followed by 19.05% in year 2005-06 and 15.88% in year 2006-07. The least growth is shown in year 2004-05 when exports declined by (-) 4.41%. This is the year when India came out of quota regime fully. The expectations were that the exports of hosiery would increase but ironically it decreased. The reason for this contraction was robust growth in exports of hosiery exports from China, which also came out of quota regime on 1st Jan 2005 but for eight months only. During this eight months, the hosiery exports of few item from China increased by 2000%. This growth was at the cost of India only. But next year India recovered to some extent and exports of hosiery grew by 19.05% in year 2005-06 and 15.88% in 2006-07. In year 2007-08, the speed of growth slowed down and it came down to mere 5.10%. In year 2008-09, the whole world was passing through financial turmoil but India's hosiery exports registered growth of 12.83%.

Annexure 3-A, shows the data on value of exports of different categories of hosiery. Figures are in INR Million. Along with this, positive or negative growth, as shown by particular category over the period of eight years i.e. from 2001-02 to till 2008-09. Also, it contains the percentage share of a particular category in particular year.

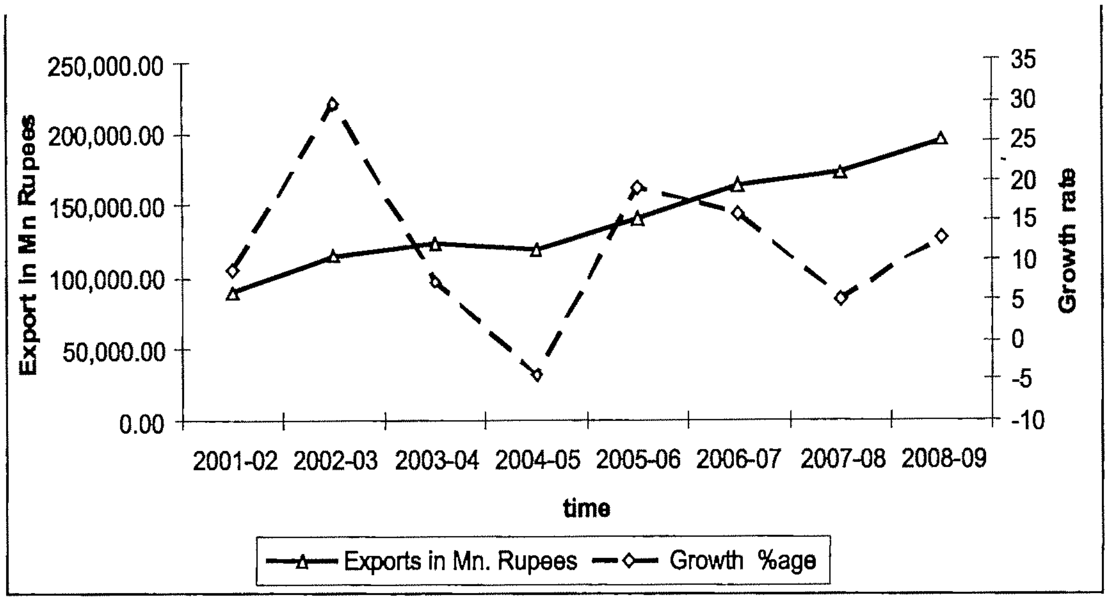


Figure 1: Export Performance and Growth of Hosiery Industry

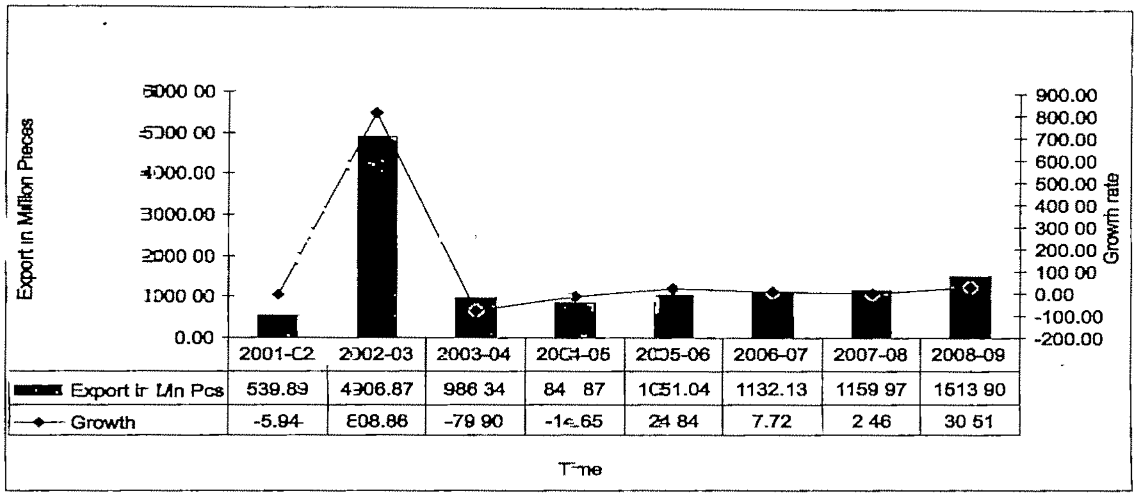
Figure1 presents the trend of growth and exports in value terms for overall hosiery industry. Table 7 shows the annual export performance in value (INR) along with growth rate and in volumetric terms (Million pieces) of overall hosiery industry over the period of eight years.

Table 7: Growth of Hosiery Export in Volumetric and Value Terms

	Exports in Million Pieces	Growth %age	Exports in Million	Growth %
2000-01	573.98	32.06	88898.40	8.9%
2001-02	539.89	-5.94	115503.00	29.93%
2002-03	4906.87	808.86	124149.00	7.49%
2003-04	986.34	-79.90	118677.00	(-) 4.41%
2004-05	841.87	**-14.65**	141282.30	19.05%
2005-06	1051.04	24.84	163717.20	15.88%
2006-07	1132.13	7.72	172064.48	5.10%
2007-08	1159.97	2.46	194142.50	12.83%
2008-09	1513.90	30.15	88898.40	8.9%

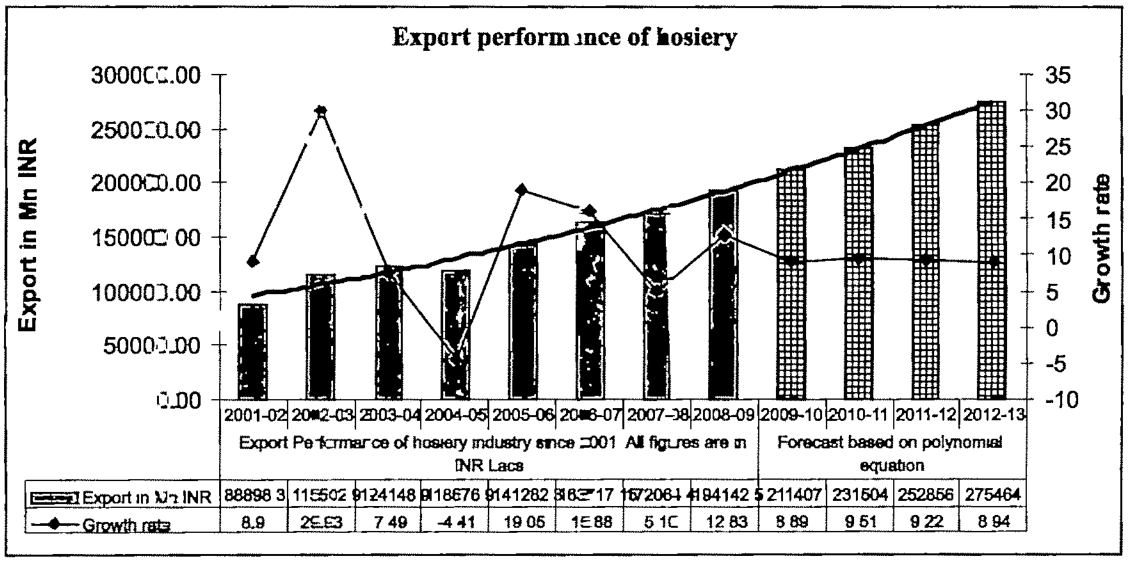
Source: http://dgft.delhi.nic.in/

It can be seen from table 6 that the volume of hosiery export has increased from 539.89 million pieces in 2001-02 to 1513.90 million pieces in 2008-09, which is growth of 185% over the period of eight years while during the same period the value of export increased from INR 88898.4 million to INR 172064.48 million which is increase of 93% in eight years. Year of 2002-03 had shown tremendous increase in export volume when hosiery exports touched all time high of 4906.87 million pieces, growth of 808.86% over previous year. But very next year, it declined by approximately 80% and reached to realistic level of 986.34 million pieces. Year of 2004-05 was bad for whole of textile industry and hosiery industry as well, when it showed decrease in export volume by 14.65%. This was due to huge Chinese export volume generated during this year. But since then it is on the rise and we have been experiencing continuous growth afterwards.



	2001-02	2002-03	2003-04	2004-05	2005-06	2006-07	2007-08	2008-09
■ Export in Mn Pcs	539.89	4306.87	986 34	84 87	1051.04	1132.13	1159 97	1513 90
—◆— Growth	-5.94	608.86	-79 90	-14.65	24 84	7.72	2 46	30 51

Figure 2: Export volume of Hosiery Industry in Million Pieces



	2001-02	2002-03	2003-04	2004-05	2005-06	2006-07	2007-08	2008-09	2009-10	2010-11	2011-12	2012-13
▤ Export in Mn INR	88898 3	115502 9	124148 9	118676 9	141282 8	163717 1	172064 4	194142 5	211407	231504	252856	275464
—◆— Growth rate	8.9	29.93	7 49	-4 41	19 05	15 88	5 10	12 83	8 89	9 51	9 22	8 94

Figure 3: Actual and expected value of exports of hosiery articles under chapter 61

Figure 3 shows the bar chart of export figures. Solid bars present actual exports in Million Rupees while grid bars are calculated or forecasted values of exports for next four years. The calculation is done on the basis of data available for previous eight years and using forecasting techniques with the help of MS Excel.

In order to forecast the value of exports for next four years, we need to draw a trend line, which suggest us the various possible equations fit to calculate it. MS Excel is capable of suggesting 5 different equations and each equation has its own reliability on the data being input. R^2 value tells the variation in dependent variable due to independent variable. R^2 values of different equations thus suggested by MS Excel are as given in Table 8.

Table 8: Equations for Forecasting

Equation	Value of R^2	
Linear	0.9503	
Logarithmic	0.8503	
Polynomial	0.9581	Best
Power	0.9055	
Exponential	0.9432	

Source: Authors' own

Linear equation has R^2 value of 0.9503 (which means 95% of variation in Y can be explained with X), Polynomial equation has R^2 value of 0.9581, while exponential equation has R^2 value of 94.32%. Polynomial equation has highest value so it qualifies for the best fit equation. The polynomial equation thus suggested by MS Excel –

$$Y = 627.73X^2 + 8169.8X + 87033.1$$

Table 9 shows the calculations to forecast the export of hosiery export for next four years. 'Y' is the export forecast or expected value of exports based on the polynomial equation. Putting the value of 'X' for next four years, we get the value of "y" as given in Table 9.

Table 9: Forecast of Export Values of Chapter 61 of ITC (HS) through Polynomial Equation

X	**9**	**10**	**11**	**12**
X^2	81	100	121	144
A	627.73	627.73	627.73	627.73
B	8169.8	8169.8	8169.8	8169.8
C	87033.1	87033.1	87033.1	87033.1
Y	211407.43	231504.1	252856.2	275463.8

Source: Authors' own

'X' is the time period i.e. year 9 (2009-10), 10 (2010-11), 11 (2011-12) & 12 (2012-13). 'A' and 'B' are the co-efficient and 'C' is the value of constant.

Graphically it is shown in figure 3 Solid bars gives the export performance and grid bars shows the expected value or forecasted values of export performance based on best fit polynomial equation for next four years. Based on the calculated or forecasted export values, the exports are expected to grow as given in Table 10.

Table 10: Forecasted Export Values as Calculated with Polynomial Equation.

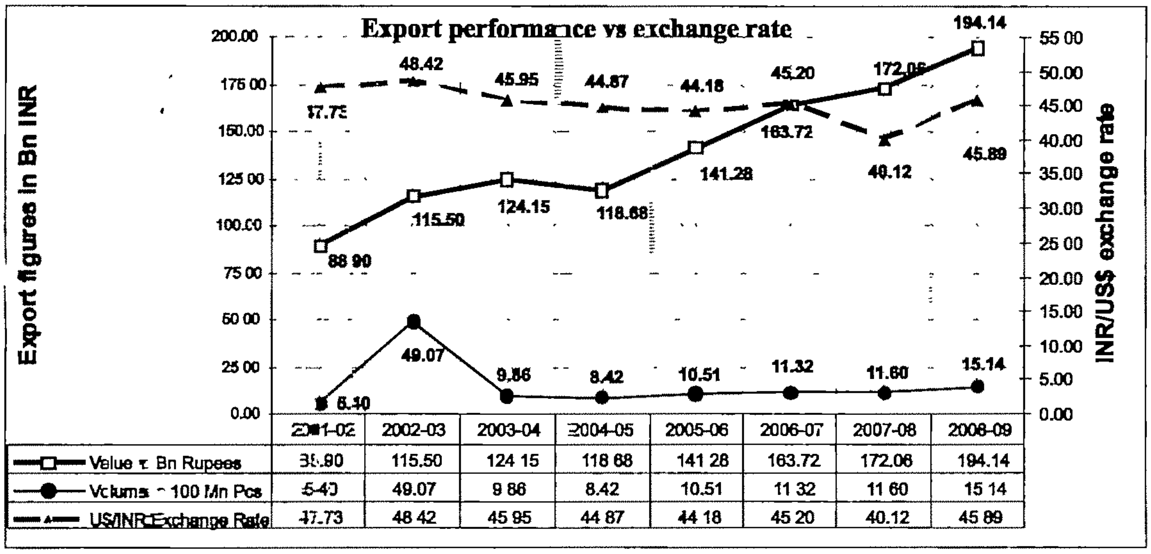
Year	Expected Value of Exports in INR Million	Expected Growth Rate %age
2009-10	211407.43	8.9%
2010-11	231504.10	9.5%
2011-12	252856.20	9.2%
2012-13	275463.82	8.95%

Source: Authors' own

Effect of Exchange Rate on Hosiery Export

Exchange rate has always played important role in export competitiveness of any country. Weak rupee is always desired by exporters. Textile as a whole is considered to be very sensitive to exchange rate. Generally, there is inverse relationship between appreciation of domestic currency and export growth. If domestic currency appreciated, exports become costlier as net realization in rupee terms decreases, and exporters have to increase the price of goods to realize the same amount of money.

We have already discussed the correlation between export performance of hosiery and exchange rate, the correlation is weak positive i.e. 0.553098. Here the positive correlation means depreciating rupee since with increasing value of rupee will lead to more demand for rupee to buy one dollar.



	2001-02	2002-03	2003-04	2004-05	2005-06	2006-07	2007-08	2008-09
—□— Value in Bn Rupees	88.90	115.50	124.15	118.68	141.28	163.72	172.06	194.14
—●— Volume in 100 Mn Pcs	5.40	49.07	9.86	8.42	10.51	11.32	11.60	15.14
—▲— US/INR Exchange Rate	47.73	48.42	45.95	44.87	44.18	45.20	40.12	45.89

Figure 4: Exchange Rate vs. Export Performance in Value and Volume terms

From Figure 4, we can see the graphical presentation of three variables. Graphically it can be seen that although the exchange rate has appreciated since 2002-03 to till 2008-09, the value or volume of exports did not decline. From above analysis it is evident that the change in exchange rate does not have any significant impact on export performance of hosiery products from India.

Conclusion

From above analysis we have concluded the (i) the growth of hosiery industry is not significant in post quota regime, (ii) there is significant change in the exchange rate after elimination of quota, (iii) there is no linear relationship between exchange rate and export performance.

One of the reasons for non-performance of hosiery industry is the lack of participation from non-export sector. After 2002, the hosiery sector was de-reserved and there was large opportunity for non-exporting sector to update their methods of production and enhance capacities. Also, the finance facility availed from financial institutions under TUFS is far less as compared to spinning and other segments of textiles. The reason so far concluded during my study is the haphazard growth of hosiery industry. The hosiery manufacturers don't have planned expansions and they buy small machines as and when they have large orders and they required it. So there was no motive to avail funds under TUFS scheme. The fund requirement at a time is not very large and can arrange the same through internal accruals or from regular commercial banks. This is why there are no large capacities the way these are in China and other parts of Far East Asia or even in Bangladesh. My studies have shown that very few hosiery manufacturers have expanded their capacities in planned manner.

Although, the relationship between weak domestic currency and export performance has been found to be not working for hosiery sector of India, when rupee appreciated to the level of Rs. 39/$ and depreciated to the level of Rs. 52/$, but it does not mean that exchange rate would not affect the export performance of hosiery if it is allowed to appreciate to any extent. Rather RBI keeps a close watch on the export performance of key industrial sector which are major foreign exchange earners, and intervenes when it crosses certain critical mark. Also, another important role of RBI is to ensure the stability in exchange rate on long term basis, since it provides confidence in exporters and they can enter into long term agreements with overseas buyers (Pawan Kumar Chugan, 2006). Fluctuating exchange rate will force them to change their prices frequently and they have to negotiate the price for every export order, which may not be viable for textile and clothing sector as a whole. In the business of textile and clothing, prices are settled on season basis. Prices are negotiated before finalizing the order for complete season or sometimes bi-seasonal basis too.

Hosiery sector is dominated by small and medium enterprises and very few exporters hedge to cover transaction risk. A stable exchange rate provide them relieve from hedging their foreign receipts. Also, economic cycle plays an important role in exchange rate determination. During the times of economic slowdown, domestic currency depreciated because inflow of foreign currency decreased and demand for foreign currency goes up.

RBI may not keep rupee at this level for long time, because to keep domestic currency weak, a nation has to bear economic cost in the form of increased inflation in domestic market and losing export competitiveness in long run. Appreciating rupee will continue to pose threat to hosiery exporters with increasing international competition from other developing and LDC. Indian exporters need to strengthen their production capacities, capabilities and managerial skills to cope up the changing business environment. They must understand the benefit of hedging the export receipts and how it can benefit them when they enter into long term agreement. Also, government and financial institutions should take initiatives to educate the small hosiery exporters so that they may gain confidence to take on long term price contracts, which will add value to their value chain (Raghbir Singh, 2006).

Non Export sector of hosiery industry remained reserved for small scale sector till 2002; it could not upgrade their methods of production during this whole period. When quota was eliminated, the participation from this segment wan not very high and also were not prepared to take on this opportunity due to outdated method of production, capacity constraints and productivity problems. The exporting sector has expanded and modernized over a period of time but they were always full of orders due to benefit of quota. Hosiery sector could not benefit from TUFS the way other sector have gained. The investment would have been much higher. Government should increase the disbursement in hosiery sector under TUFS.

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Annexure 1A: Segment wise Progress under TUFS from 01/04/1999 to 30/092009

	Received			Sanctioned			Disbursed	
Industry segment	No. of Applications	Project Cost	Amount of loan required	No. of Applications	Project cost	Amount	No. of Appli--cation	Amount
Composite Up-grdation	933	38640	18236	866	36789	16257	880	14097.83 (23.88%)
Garment Manufacturing	1944	9598.38	4733.51	1935	9443.02	4036.60	1905	3553.92 (6.02%)
Knitting	1943	4311.65	2073.08	1938	4154.60	1909.90	1935	1738.10 (2.94%)
Made-up manufacturing	749	1515.85	1038.97	746	1469.41	823.40	745	687.67 (1.16%)
Processing of fibers, yarns, fabrics, garments and made ups	2198	20823.72	8617.32	2163	21482.20	8019.80	2150	6684.52 (11.32%)
Spinning	3373	66517.08	32783.15	3273	65616.75	28194.28	3257	24935.92 (42.24%)
Technical Textiles including non woven	234	2161.91	1051.85	234	2161.41	1043.85	234	904.68 (1.53%)
Weaving	3871	16412.64	6993.47	3862	16244.75	6592.77	3850	5456.18 (9.24%)
Manufacturing Viscose filament yarn and synthetic filament yarn, texturising, crimping and twisting	135	2043.96	1142.44	133	2002.82	1125.23	132	913.20 (1.55%)
Independent weaving preparatory	138	431.45	175.84	133	391.22	117.10	133	66.87 (0.11%)
All Segments	15518	162456.64	76845.63	15283	159755.2	68119.93	15221	59038.89

Source: Office of Textile Commissioner, Mumbai

Annexure 2A- Articles of Hosiery Apparels Chapter 61

COMMODITY 61. ARTICLES OF APPAREL AND CLOTHING ACCESSORIES, KNITTED OR CROCHETED		
Sr. No.	**HS Code**	**Commodity**
1	6101	MEN'S OR BOYS COATS, CAR COATS, CAPES, CLOAKS (INCLUDING SKI JACKETS), WIND-CHEATERS, WIND JACKETS AND SIMILAR ARTICLES, KNITED OR CROCHETED, OTHER THANHEADING 6103
2	6102	WOMEN'S OR GIRLS COATS, CAR COATS, CAPES, CLOAKS (INCLUDING SKI JACKETS), WIND-CHEATERS, WIND JACKETS AND SIMILAR ARTICLES, KNITED OR CROCHETED, OTHER THANHEADING 6103
3	6103	MEN'S OR BOY'S SUITS, ENSEMBLES, JACKETS, BLAZERS, TROUSERS, BIB AND BRACE OVERALL, BREECHES AND SHORTS (OTHER THAN SWIMWEAR) KNITTED AND CROCHETED
4	6104	WOMEN'S OR GIRL'S SUITS, ENSEMBLES, JACKETS, BLAZERS, DRESSES, SKIRTS, DIVIDED SKIRTS, TROUSERS, BIB AND BRACE OVERALL, BREECHES AND SHORTS (OTHER THAN SWIMWEAR) KNITTED AND CROCHETED
5	6105	MEN'S AND BOY'S SHORTS, KNITTED AND CROCHETED
6	6106	WOMEN'S OR GIRL'S BLOUSES, SKIRTS AND SHIRT BLOUSES, KNITTED AND CROCHETED
7	6107	MEN'S AND BOY'S UNDERPANTS, BRIEFS, NIGHTS SHIRTS, PYJAMAS, BATHROBES, DRESSING GOWNS AND SIMILAR ARTICLES KNITTED OR CROCHETED.
8	6108	WOMEN'S AND GIRL'S SLIPS, PETTICOATS, BRIEFS, PANTIES, NIGHTS DRESSES, PYJAMAS, NEGLIGEES, BATHROBES, DRESSING GOWNS AND SIMILAR ARTICLES KNITTED OR CROCHETED.
9	6109	T-SHIRTS, SINGLE LETS, AND OTHER VESTS KNITTED OR CROCHETED.
10	6110	JERSEYS, PULLOVERS, CARDIGANS, WAISTCOATS AND SIMILAR ARTICLES, KNITTED OR CROCHETED.
11	6111	BABIES GARMENTS AND CLOTHING ACCESSORIES KNITTED AND CROCHETED
12	6112	TRACKSUITS, SKISUUITS AND SWIMWEAR KNITTED OR CROCHETED
13	6113	MARMENTS MADE UP OF KNITTED OR CROCHETED FABRICS OF HEADING 5903, 5906, 5907
14	6114	GARMENTS KNITTED OR CRICHETED
15	6115	PANTY HOSE, TIGHTS, STOCKING, SOCKS AND OTHER HOSIERY INCLUDING STOCKING FOR VARICOSE VEINS AND FOOTWEAR WITHOUT APPLIED SOLES KNITTED OR CROCHETED.
16	6116	GLOVES, MITTNS AND MITTS, KNITTED OR CROCHETED
17	6117	OTHER MADEUP CLOTHING ACCESSORIES, KNITTED OR CROCHETED OR CROCHETED PARTS OF GARMENTS OR OF CLOTHING ACCESSORIES

Source: www.dgft.delhi.nic.in

Annexure 3A : Category Wise Export Performance of Hosiery Industry

HS Code		2001-02	2002-03	2003-04	2004-05	2005-06	2006-07	2007-08	2008-09
	Export in Mn Rs.	1146.549	6125.852	3117.593	2611.191	2671.871	1216.257	388.541	488.7
	Growth %	-43.52	434.29	-49.11	-16.24	2.32	-54.48	-68.05	25.78
6101	%age Share	1.29	5.3	2.51	2.2	1.89	0.74	0.23	0.25
	Export in Mn Rs.	227.64	1396.869	1141.577	538.253	167.1	231.746	177.464	284.5
	Growth %	-61.13	513.63	-18.28	-44.09	-73.82	38.69	-23.42	60.31
6102	%age Share	0.26	1.21	0.92	0.54	0.12	0.14	0.1	0.15
	Export in Mn Rs.	3133.389	4446.501	4557.323	4643.582	5440.837	5666.382	6336.687	9184.1
	Growth %	16.41	41.91	2.49	1.89	17.17	4.15	11.83	44.94
6103	%age Share	3.52	3.85	3.67	3.91	3.85	3.46	3.68	4.73
	Export in Mn Rs.	5945.928	7005.965	6927.533	7184.28	7987.624	9335.24	12313.7	14840.2
	Growth %	-15.29	17.83	-1.12	3.71	11.18	16.87	31.91	20.52
6104	%age Share	6.69	6.07	5.58	6.05	5.65	5.7	7.16	7.64
	Export in Mn Rs.	18638.91	19613.48	18469.93	19630.94	19007.87	17505.66	20285.04	20345.1
	Growth %	5.32	5.23	-5.83	6.29	-3.17	-7.9	15.88	0.3
6105	%age Share	20.97	16.98	14.88	16.54	13.45	10.69	11.79	10.48
	Export in Mn Rs.	4519.417	6516.449	10476.59	10499.31	15320.45	15695.9	15052.65	17383.5
	Growth %	-9.91	44.19	60.77	0.22	45.92	2.45	-4.1	15.48
6106	%age Share	5.08	5.64	8.44	8.85	10.84	9.59	8.75	8.95
	Export in Mn Rs.	5052.744	7958.308	8128.286	7984.844	7620.434	8853.625	9614.958	11787.9
	Growth %	7.03	57.5	2.14	-1.76	-4.56	16.18	8.6	22.6
6107	%age Share	5.68	6.89	6.55	6.73	5.39	5.41	5.59	6.07
	Export in Mn Rs.	7210.628	8666.162	9993.396	9399.325	9409.592	10688.28	11976.72	13790.7
	Growth %	52.65	20.19	15.32	-5.94	0.11	13.59	12.05	15.15
6108	%age Share	8.11	7.5	8.05	7.32	6.66	6.53	6.96	7.1
	Export in Mn Rs.	28204.39	36861.09	43278.5	38226.92	52130.53	66808.28	66991.62	70919.9
	Growth %	25.8	30.69	17.41	-11.67	36.37	28.16	0.27	5.86
6109	%age Share	31.73	31.91	34.86	32.21	36.9	40.81	38.93	36.53
	Export in Mn Rs.	7380.458	8235.873	7131.323	7445.071	9007.489	11335.43	10569.43	12922.6
	Growth %	-4.51	11.59	-13.41	4.4	20.99	25.84	-6.76	22.26
6110	%age Share	8.3	7.13	5.74	6.27	6.38	6.92	6.14	6.66
	Export in Mn Rs.	4416.003	5611.517	5720.619	5328.733	7419.128	9908.423	11400.53	12963
	Growth %	26.6	27.07	1.94	-6.85	39.23	33.55	15.06	13.71
6111	%age Share	4.97	4.86	4.61	4.49	5.25	6.05	6.63	6.68
HS Code		2001-02	2002-03	2003-04	2004-05	2005-06	2006-07	2007-08	2008-09

6112	Export in Mn Rs.	179.416	283.267	1135.208	768.541	415.286	345.163	296.311	329.8
	Growth %	-3.87	57.88	300.76	-32.3	-45.96	-16.89	-14.15	11.3
	%age Share	0.2	0.25	0.91	0.65	0.29	0.21	0.17	0.17
6113	Export in Mn Rs.	35.471	30.604	100.013	140.622	108.483	84.933	53.914	110.7
	Growth %	203.5	-13.72	226.8	40.6	-22.85	-21.71	-36.52	105.33
	%age Share	0.04	0.03	0.08	0.12	0.08	0.05	0.03	0.06
6114	Export in Mn Rs.	420.104	497.713	951.044	1111.777	1856.319	3232.838	3978.908	5594.9
	Growth %	-16.93	18.47	91.08	16.9	66.97	74.15	23.08	40.61
	%age Share	0.47	0.43	0.77	0.94	1.31	1.97	2.31	2.88
6115	Export in Mn Rs.	1751.281	1430.962	1637.256	1179.072	1376.473	1711.264	1539.216	1610.7
	Growth %	39.73	-18.29	14.42	-27.98	16.74	24.32	-10.05	4.64
	%age Share	1.97	1.24	1.32	0.99	0.97	1.05	0.89	0.83
6116	Export in Mn Rs.	223.492	281.514	406.863	374.011	279.998	381.914	362.42	486.2
	Growth %	-32.93	25.96	44.53	-8.07	-25.14	36.4	-5.1	34.15
	%age Share	0.25	0.24	0.33	0.32	0.2	0.23	0.21	0.25
6117	Export in Mn Rs.	412.523	540.86	975.916	1510.507	1062.854	715.824	726.385	1099.9
	Growth %	-66.2	31.11	80.44	54.78	-29.64	-32.65	1.48	51.42
	%age Share	0.464	0.468	0.786	1.273	0.752	0.437	0.422	0.567

Source: www.dgft.nic.in

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An Overview of India's Intra-Industry Trade

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Intra-Industry Trade (IIT) is a simultaneous exports and imports of goods and services of the same industry and now it has become an integral part of the world trade. The present paper has tried to analyse the nature and pattern of India's IIT at 6-digit level. The paper shows that, with the passage of time, not only the degree of IIT but also the contribution of IIT in total trade have increased significantly. The paper also reveals that, overall, India's IIT is vertical in nature and decrease in tariff rate helped in increasing the degree of IIT.

Keywords: *Intra-industry Trade, Horizontal and Vertical Intra-industry Trade, Import-weighted Average Tariffs*

Introduction

International trade, also called as cross-border trade, is a special form of trade in which exchange of goods and services across international borders takes place. It involves trade between different countries and countries engage themselves in these types of trades because they are getting benefitted out of it. The benefits of international trade have been discussed by so many economists. Initially it was explained by Adam Smith with the theory of Absolute Advantage and by David Ricardo with the theory of Comparative Advantage, later on Hecksher and Ohlin proposed Factor Endowment Theory. All these theories emphasised the supply side factors as a reason for international trade and they meant that the benefit of the trade to a country will depend on its overall efficiency for producing a good. If a country is relatively efficient in producing a good, it will export otherwise import. Therefore, these theories explained that a country will either export or import goods of an industry, and the corollary of the theory was that it cannot simultaneously exports and imports goods within the same industry. But with the progress in the research on international trade, it was found that most of the countries are involved in simultaneous exports and imports of very similar goods and services, this was contradictory to the traditional theories, and these types of trade were termed as "intra-industry trade (IIT)".

The evidence of intra-industry trade (IIT) changed the perspective of analysing international trade. It was first observed in 1960s and then after research had started in this direction to explain the reason for and nature of IIT, since traditional trade theories were unable to explain this nature of trade therefore it requires a fresh look to analyse it. Initially it was observed that IIT is a substantial part of trade of developed countries but later on it was found that developing countries are also involved in such types of trade substantially. With the progress in the research of IIT, thereafter, it was possible to disentangle IIT into two categories – horizontal and vertical. In horizontal intra-industry trade (HIIT), products differ in their *attributes* but do not differ in quality or price and it is assumed that the producers, in the industry, are using same factors of production and same production techniques; on the other hand, in vertical intra-industry trade (VIIT), goods differ in terms of quality and price significantly because producers here are using different factors of production and different production techniques.

The present paper will discuss the nature and pattern of India's IIT with world and the time frame taken here is from 2000 to 2008. The paper is different from some earlier works (Veeramani, 2001; 2003 and Burange and Chaddha, 2008) on two grounds, first it discusses the nature of IIT at somewhat more disaggregated level, i.e., at HS-6 digit and second the paper will also discuss about nature and pattern of HIIT and VIIT of India, which has not been discussed so far. Apart from this, we shall also try to find out the relationship between IIT and tariff rate using the concept of "import-weighted average tariff".

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Literature Review

Till 1950s, international trade was considered to be an inter-industry trade and factor endowment theory was able to explain such type of trade behaviour. It was assumed that a country will produce and export goods which it can efficiently produce, otherwise it will import. In 1950s, Leontief found that although US is a capital abundant country but it exports labour-intensive commodities and import capital-intensive commodities, and this paradox were called as Leontief Paradox. This finding compelled the researchers to analyse trade pattern carefully. Later on, in 1961, Linder observed that a country with high and similar per-capita income has similar demand pattern which leads to exchange of similar but differentiated products, and this was termed as Linder's hypothesis. This hypothesis initiated more research in this direction and the focus of explaining international trade was changed from supply side (as in traditional trade theories) to demand side factors. Later on Linder's hypothesis was proved empirically by Hanink (1988) and he found that the fundamental relationships discussed by Linder were valid. Apart from this Linder also said that (Hanink 1988) the trade between similar but poor country is not supposed to be very high. Although he talked about IIT but he did not used the term specifically. The term *intra-industry trade* (IIT) was first used by Balassa (1966). Initial empirical work was done by Grubel (1967) where he tried to establish a relationship between natures of IIT with trade liberalisation of EEC (European Economic Community). Grubel and Lloyd (1971) developed first index to measure the degree of IIT as well as they proved that IIT is a "pure phenomenon".

Initial work on IIT was based on Monopolistic kind of market structure, i.e., products are slightly differentiated. Dixit and Stiglitz (1977) proposed *love-of-variety* approach, where they said that consumers would prefer variety to one product only; while Lancaster (1980) proposed *most-preferred goods* or *ideal goods* approach, where he said that if different specifications of a same product is available before a consumer, he will prefer his ideal one. Both of these theories stressed on demand side aspect of trade in similar kind of products. Krugman (1979, 1980, 1981) also emphasised on the trade of similar products but his approach was different, he worked on monopolistic competition under increasing return and concluded that international trade is very much possible in economies of similar factor endowments and in-fact, similar countries will trade more.

Falvey (1981) worked on somewhat different characteristics of IIT, whereas all of the above work was based on the similar types of products, i.e., horizontally differentiated products, he worked on vertical product differentiation and IIT. He showed that vertical IIT and inter-industry trade can co-exist and increasing return-to-scale is not an essential condition for trade. Davis (1991) also found the similar result. He worked on the relationship between economies of scale and IIT and found that IIT is very much possible even with constant return, and in-fact, increasing return-to-scale is not necessary. He proposed a model for that and concluded that IIT will be maximum when countries have identical factor endowment ratios. Falvey and Kierzkowski (1987) worked on the correlation between the share of vertical IIT and the average market size of the two countries and they found that these two are positively correlated, and in-fact, it will be more if the difference in capital-labour endowment between the two countries is more. Shaked and Sutton (1983) and Sutton (1986) also worked on vertically differentiated products but their work was based on oligopoly market environment rather than monopolistic environment. They concluded that trade of vertically differentiated products are possible in oligopoly environment where the main burden of quality improvement is on R&D and other fixed costs and unit variable costs will rise only slowly with increase in quality.

Along with these theoretical developments regarding different models of intra-industry trade, some work regarding measurement issues of IIT was also being conducted. The first striking work on measuring IIT was done by Grubel and Lloyd (1971). They worked on Australian trade data (on two sectors – iron and steel, and petroleum) and found that degree of IIT is related to the level of aggregation of trade data. As the aggregation level increases, the degree of IIT, as expected, will also increase. They also conducted an empirical study and had similar findings that Australian IIT is maximum with countries of similar factor endowments (New Zealand and South Africa). Greenaway and Milner (1981, 1983) also worked on the measurement issue of IIT. In their first work, they showed that IIT is a product of industry characteristics and not of macro-economic adjustment process, and in second work they discussed the problem of categorical aggregation in the measurement of IIT and the way to identify and check it. Balassa and Bauwens (1987) conducted an empirical study to understand different factors affecting the degree of IIT. Their work was based on multi-commodity and multi-industry framework and results were matching with the theory. Bergstrand (1990) also conducted an empirical study on trade data of OECD countries (mainly with horizontally differentiated products) and tried to find out the effects of different determinants on degree of IIT. His findings were also similar to that of previous one, that in most of the cases the determinants are having same sign as expected theoretically.

Till 1990, although lot of work had been done on horizontally and vertically differentiated products but there were no formal criteria to make distinction between them. The first formal distinction between the two categories of products was done by Abd-el-Rahman (1991). He said that if the difference between export and import unit value is maximum upto 15 per cent, the product will be said to be horizontally differentiated; and if this difference exceeds the 15 per cent limit then it would be considered as vertically differentiated products. Some other work regarding focusing on the importance of disentangling horizontal intra-industry trade (HIIT) with vertical intra-industry trade was also conducted by some researchers like Greenaway, Hine and Milner (1994, 1995), Gullstrand (2002) and Andresen (2003). Fontagne, Freudenberg and Gaulier (2005) had categorised world trade into three categories – inter-industry, intra-industry in horizontally differentiated products and intra-industry in vertically differentiated products. They found that it is VIIT which is dominating in the world's IIT. Cabral, Falvey and Milner (2008) also worked on different hypotheses regarding HIIT, VIIT and NT (Net Trade), and they found that the prediction for HIIT was quite conventional that larger endowment differences would reduce the level of HIIT; while the result of VIIT was little bit different, theoretically it should increase with increase in endowment differences but actually it grew as long as the endowment differences remains small. In case of larger factor endowment differences, the degree of VIIT depends on whether the specific factor is used by the industry or not, if it is used then the share of VIIT will increase with increase in endowment differences of trading partners (and vice-versa), on the other hand if it is not used then VIIT will decrease with increase in endowment difference (and vice-versa). Brulhart (2008) have calculated GL-index for world and found that the degree of IIT has increased significantly from the year 1962 to 2006, and we cannot overlook the contribution of IIT in world trade.

Some recent works have been done with respect to India also, some of them have been discussed here. Veeramani (2001, 2003) has conducted some studies on India's IIT. In his first work he calculated GL-IIT index at 4-digit level for the period ranging from 1987 to 1999. He categorised the total trade into two categories – primary commodities and manufactured commodities. He found that both GL-index and export growth of primary commodities was lower while for manufactured commodities it was higher. He also found that overall India's IIT is vertical in nature because trade is more with dissimilar countries rather than similar countries. In his second work, he analysed the effects of India's liberalisation process on India's IIT and found that it helped in promoting IIT. Burange and Chaddha (2008) have also conducted a study on India's IIT for the period ranging from 1987-88 to 2005-06. They categorised the entire world into seven country groups (as defined by World Atlas) and calculated GL-IIT at 4-digit level, and they found that India's IIT is more with dissimilar countries.

As far as the above three India related works are concerned, they helped in understanding the nature and pattern of India's IIT but their major limitations are two folds – first these studies have been conducted at higher aggregation level, i.e., 4-digit level; and second they have not disentangled HIIT with VIIT therefore not studied the nature and pattern of India's HIIT and VIIT. This paper has taken care of both of these two limitations, it is based on somewhat more disaggregated level, i.e., at 6-digit level and we have disentangled total IIT into HIIT and VIIT and analysed their nature and pattern.

Methodology

The most important thing regarding measuring intra-industry trade is that at what degree of aggregation it should be measured or what level of aggregation should be considered as an industry. Although there are different ways of defining the aggregation level for an industry, but here we have considered 6-digit ITC-HS level as an industry. Moreover, different level of aggregation normally affects the degree of IIT (degree of IIT will be more at higher aggregation level) but, in general, it does not affect the pattern of IIT.

Once the aggregation level is decided, the next job is to select which index should be used to measure the degree of IIT. There are so many indices proposed in the literature, but here we have used the most popular one, the Grubel-Lloyd index for measuring intra-industry trade, i.e., GL-IIT. The formula used for measuring GL-IIT is shown in the next section

Since the objective of the paper is to understand the nature of India's IIT in detail, as discussed in the Section IV, therefore we need to disentangle IIT into horizontal intra-industry trade (HIIT) and vertical intra-industry trade (VIIT) and to do that we have followed the method of disentangling IIT into HIIT and VIIT as developed by Rahman (1991). Not only this, we have also used 15 per cent as dispersion factor to separate HIIT from VIIT, the method is discussed in the second next section.

Do the changing tariff rates affect the degree of IIT? This question can only be answered if we study the relationship between these two, therefore this is one of our objectives as discussed in Section IV. Average tariff rate has not been used here because it may give some misleading result since it does not consider the import-value of individual product and and give equal importance to tariff rate of entire products. To avoid this problem, we have taken import weighted-average tariff rate (as discussed by Mikic and Gilbert, 2008) and its methodology has been discussed in the coming Section under the heading of "Calculation of Import-Weighted average tariff.

Index used for Measuring Intra-Industry Trade

There are different indices proposed in the literature to measure the level of intra-industry trade, but in this paper we have used the most used index which is Grubel-Lloyd index (GL-index). We have used it because of its wide acceptability. The formula proposed by them for measuring IIT for individual product group or industry *i*, is:

$$IIT_i = \frac{(X_i + M_i) - |X_i - M_i|}{(X_i + M_i)} \times 100 \quad \text{----} \quad (1)$$

where X_i and M_i represents the exports and imports of the product group *i* respectively and IIT_i is the degree of intra-industry trade for the product group or the industry *i*. Here the value of degree of IIT will ranges between 0 to 100, 0 means absolutely inter-industry trade and 100 means absolutely intra-industry trade. After then they proposed a modified formula, which was a weighted average one, to calculate the level of IIT for a country, but the formula did not allow any imbalance in a country's total trade and had downward bias. Therefore, they proposed another "adjusted" formula which takes care of these limitations. The adjusted formula is shown as:

$$IIT_j = \frac{\sum_{i=1}^{n}(X_i + M_i) - \sum_{i=1}^{n}|X_i - M_i|}{\sum_{i=1}^{n}(X_i + M_i) - \left|\sum_{i=1}^{n}X_i - \sum_{i=1}^{n}M_i\right|} \times 100 \quad \text{----}(2)$$

We shall use equation 2, i.e., adjusted GL-IIT, for our calculation.

Disentangling Horizontal and Vertical Intra-Industry Trade

Total IIT (TIIT) is sum of HIIT and VIIT, as shown in equation 3

$$IIT = HIIT + VIIT \quad \text{----}(3)$$

While to disentangle IIT into HIIT and VIIT, equation 4 is used, which is shown as

$$1 - \alpha \le \frac{UV_{exp}}{UV_{imp}} \le 1 + \alpha \quad \text{----}(4)$$

where UV_{exp} and UV_{imp} are unit-value of export and import respectively. "α" is called as "dispersion factor". There is no unanimous value of α, for disentangling IIT into HIIT and VIIT but the most preferred value is 0.15 (15 per cent). It means if the ratio of UV_{exp} to UV_{imp} lies between 0.85 to 1.15, the product will be called as horizontally differentiated (HIIT) while if the ratio is lower than 0.85 or greater than 1.15, the product will be said to be vertically differentiated

(VIIT). Moreover, if the ratio is lower than 0.85 it will be called as low-quality VIIT (LQVIIT) and if it is higher than 1.15 it will be called as high-quality VIIT (HQVIIT).

The formula used to calculate unit values are shown as

$$UV_{exp} = \frac{Value_{exp}}{Units_{exp}} \quad \text{and} \quad UV_{imp} = \frac{Value_{imp}}{Units_{imp}} \quad ---- (5)$$

where values are mentioned in terms of dollars and units are in terms of selling units like kg, tonne, etc.

Calculation of Import-Weighted Average Tariff

To understand the effect of tariff rate on the level of intra-industry trade, we have used "import-weighted average tariff (IWT)". Here import-weighted tariff has been used rather than simple tariff because IWT will take into account of each product in the import profile of the economy which was not possible otherwise. The formula used for IWT is shown in equation 6

$$IWT_j = \frac{\sum_{i=1}^{n}(w_i \times m_i)}{\sum_{i=1}^{n} m_i} \quad ---- (6)$$

where *j* stands for a country, *w* stands for weighted-average of tariff, *m* stands for the import value and *n* represents the total number of imported products imported at that level.

Data Analysis

The basic objective of the paper is to understand the nature and pattern of India's IIT, HIIT and VIIT with world so that we can understand that, has the intra-industry trade changed over the period of time and does that signify any changes in economic condition of the country. For our study, the data have been taken from WITS (World Integrated Trade Solution) website. The time period used is from 2000 to 2008, and level of aggregation is used as 6-digit ITC-HS classification. In this paper, we are going to test few hypotheses, these are – First - with the passage of time, both degree of IIT and contribution of IIT in total trade, have increased. Second – being a developing country, degree of IIT should be lower as well as VIIT should dominates HIIT. Third – the sign of correlation coefficient between IIT and tariff rate should be negative, i.e., decrease in tariff help in promoting IIT.

Now we shall take-up all these hypotheses one by one. To test the first hypothesis, as shown in Table 1, we have taken trade data on total basis as well 6-digit total intra-industry trade, both the trade figures are in thousand dollars and taken from WITS web site. We then calculated GL-IIT index for different years, from 2000 to 2008. We have also calculated percentage contribution of 6-digit intra-industry trade in total trade and to do this column 4 of the Table 1 has been divided by column 3 and then multiplied by 100. At the end of the table, we have calculated the percentage change of different columns. It is clear from Table 1 that both the degree of IIT and contribution of IIT in total trade have increased significantly from 2000 to 2008, it is increased by 24.8 per cent and 27.2 per cent respectively. Not only this, for the same time period, the increase in 6-digit total intra-industry trade is more than increase in total trade, the former has been increased by 555 per cent while the latter by 415 per cent only.

Table 1: Degree of IIT and Contribution of IIT in Total Trade

Year	GL-IIT	Total Trade ($ '000)	6-digit Total IIT ($ '000)	% Contribution of IIT in Total Trade
2000	27.2	96626890	72880535	75.4
2001	19.9	96214972	87638593	91.1
2002	20.8	113589589	104908158	92.4
2003	23.2	140235570	135150908	96.4
2004	26.6	188082018	182026762	96.8
2005	28.3	253154133	238225459	94.1
2006	27.6	311510437	300876063	96.6
2007	29.3	364543347	355961115	97.6
2008	34.0	497573004	477512788	96.0
% Change	24.8	415	555	27.2

Source: Trade data compiled from WITS web site

Table 2: Degree of IIT, HIIT and VIIT

Year	GL-IIT	HIIT	VIIT
2000	27.2	10.3	89.7
2001	19.9	10.3	89.7
2002	20.8	11.7	88.3
2003	23.2	14.5	85.5
2004	26.6	15.8	84.2
2005	28.3	16.6	83.4
2006	27.6	17.3	82.7
2007	29.3	15.1	84.9
2008	34.0	14.2	85.8
% Change	24.8	37.9	-4.4

Source: Trade data compiled from WITS web site

Data regarding second hypothesis is shown in Table 2. From Table 2, we can say that although the degree of IIT has increased significantly but still is not very high because the maximum value of IIT is 34.0 in the year 2008. Another thing which is very clear from the Table 2 is that VIIT dominates HIIT, but interestingly, over the years, the level of VIIT decreased by 4.4 per cent while that of HIIT has increased by 37.9 per cent.

Table 3: Relationship between the Degree of IIT and Import-Weighted Average Tariff Rate

Year	GL-IIT	6-digit IWT
2001	19.9	26.47
2004	26.6	22.82
2005	28.3	13.41
2007	29.3	10.41
2008	34.0	6.12
Correlation Coefficient		-0.93

Source: Trade data compiled from WITS web site

Table 3 shows the data regarding our third hypothesis, i.e., the level of GL-IIT and 6-digit import-weighted average tariff, for the period from 2000-2008. In this case, it is noteworthy that, since each year tariff data was not available therefore only those years' tariff data which was available is shown in Table 3.

Out of the nine years period under consideration, tariff data were available only for five years, as shown in the Table 3. It is very clear, from Table 3, as expected theoretically, decrease in tariff promoted increase in IIT. The sign of correlation coefficient is negative and it is strongly correlated.

Result

The analysis shows that, all the three hypotheses proposed in the previous section are accepted. With the passage of the time the degree of India's IIT has increased along with the contribution of IIT in total trade. This shows the importance of intra-industry trade in India's total trade. Increasing intra-industry trade may also reveals that now the demand-pattern of the country is changing and consumers are demanding different varieties of a product rather than having several products with one variety only. This trend can be justified with the fact that as the economy grows the demand of different varieties of a product increases, this is because of the increase in disposable income of consumers. This trend fits well with our case of India, that India is also a developing country and economy has grown significantly during the last ten years period, therefore one can expect that the number of consumers with more disposable income has increased resulting increase in demand of different varieties of a product which ultimately leads to increase in intra-industry trade of the country.

In the second test, we found that vertical intra-industry trade dominates over horizontal one and this pattern of trade can be explained by the fact that although India is a developing country most of its trade are with developed country, i.e., with dissimilar economies. Although the trade figure is not shown over here but India's major trading partners are USA, European Union, China and Singapore and all these economies are much bigger than Indian economy. India acts as manufacturing and outsourcing base for these countries which also leads to more VIIT than HIIT. Therefore we can accept our second hypothesis that India being a developing country, VIIT dominates HIIT.

In the third test, it was found that an inverse relationship exists between IIT and import-weighted average tariff rate, this is again confirming our hypothesis that decreasing tariff helps in promoting IIT. Theoretically this can be explained easily that as tariff rate will decrease it will lead to increase in trade. Now the hypothesis that was tested over here shows that decrease in tariff helps not only in increasing trade but also helps in increase in intra-industry trade this finding is also important because this is not necessary that increase in trade will always lead to increase in intra-industry trade. Therefore one can say that our result matches with theoretical expectations.

Conclusion

Looking at the results of analysis, one can say that the nature and pattern of India's intra-industry trade is more or less matching with the theoretical principles. Along with this increase in intra-industry trade of India signifies that over the years its economic conditions have improved because increase in intra-industry trade can be treated as an indicator of Indian people having more disposable income resulting increase in demand of different varieties of a product. The scope of the paper can be expanded further if we take cross-country as well as cross-sector analysis of intra-industry trade into consideration, then we shall get some deeper understanding of the nature of India's IIT. To conclude, the paper may ignite some more minds into this direction and we get better analysis and some more understandings regarding India's IIT, in future.

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Modelling Factors Influencing Employer for Adoption of Internet Recruiting: Typology and Determining Factors

Vinky Sharma

In this paper, an attempt has been made to develop a conceptual model or factors that influence employer for adoption of internet recruiting and also to describe a typology and determining factors Understanding influential issues for adoption is imperative in measuring the dynamics of internet recruiting and their probable success or failure The paper proposes a typology of factors in adoption of internet recruiting. In addition, it also explains the general outline for examining employer responses, by presenting the relationship between the factors contributing to the phases of adoption which can lead to a specific action In conclusion, the paper discusses directions for future research regarding Internet recruiting issues and its adoption thereof.

Keywords: *Modelling, Adoption, Internet Recruitment, Typology, Employer Behaviour, Influential Factors*

Introduction

The internet enable recruitment situation has high stakes both for the potential employer and candidates. Considerably, it is interesting to note that with the augmentation of web-based recruitment, three critical recruiting phases of adoption have been formulated: following a prominent suggestion initiation, and implementation (Rogers, 2003a).

As practice, it is agreed that e-HRM leads to considerable changes and therefore should be taken as an important development in the HR field (Lepak and Snell, 1998; Lengnick-Hall and Moritz, 2003a; Gueutal and Stone, 2005). This development provokes an important question for employers regarding adoption of new methods and technology. There are certain body of empirical researches that addresses organisational adoption (Ball, 2001a; Beamish et al., 2002; Martin and Jennings, 2002a; Comacchio and Scapolan, 2004; Hausdorf and Duncan, 2004a; Hoi, 2006; Florkowski and Olivas-Luja´n, 2006a; Parry and Wilson, 2006; Olivas-Luja´n et al., 2007; Panayotopoulou et al., 2007; Teo et al., 2007a; Galanaki and Panayotopoulou, 2008; Keim and Weitzel, 2008a; Lau and Hooper, 2008). For the functional focus, the studies can be distinguished as the adoption of general e-HRM (Lau and Hooper, 2008) from studies that focus the adoption of specific functional subset of e-HRM, such as e-recruiting (Keim and Weitzel, 2008b) or e-learning (Martin and Jennings, 2002b). At an extreme from literature, the only reliable result depicts organisational size as a determinant of adoption (Ball, 2001b; Hausdorf and Duncan, 2004b; Florkowski and Olivas-Luja´n, 2006b. Teo et al., 2007b).

Researchers working in this area have only little knowledge concerning the factors of adoption. There is no single or simple answer to the question, "How does adoption of internet recruiting affect the behaviours and attitudes of the employers?" Thus, employers may react positively, negatively, or indifferently, subsequent to the adoption of internet recruiting. The study therefore aims at factors that influence employer's behaviour for adoption of internet recruiting.

The structure of the paper proposes a typology of factors and discusses the relationships among employer adoption to the internet recruiting. The impact of variables on employer response is examined to understand better what predicts each of them. The paper then presents the factors contributing to the cause and effect relationship, thus describing the general outline that leads to the phases of adoption. In the concluding section, possible research questions regarding human resource issues are discussed.

Adoption - Internet Recruiting

Internet recruiting adoption or e-HRM adoption research refers to the research on an adoption of

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information technology (IT) (Jeyaraj et al., 2006a) as it is binding to imply the application of IT. Furthermore, in general it is established that adoption constitutes a process that comprises of several phases (Jeyaraj et al., 2006b). Following a prominent suggestion, initiation, and implementation can be seen as major phases of adoption (Rogers, 2003b). These subsequent steps may be enforced for measuring employer's behaviour towards adoption of technology.

Referring adoption, it unfolds the basic reasons that generate the spark for initiation and implementation of IT for HR functions. In adoption research, constructs such as "perceived usefulness" (Davis, 1989) or "relative advantage" (Rogers, 2003c) refer to advantageous universal characteristics of IT as an important trigger of adoption. Abstracting from detail advantages such as cutting costs, speeding up processes, or improving quality (Lengnick-Hall and Moritz, 2003b), general work on IT unfolds that automation and information are two general potentials of IT that epitomize its basic organisational advantages (Zuboff, 1985).

The same as automated production, automated HRM promises advantages in costs, time, and quality of HR processes and therewith a liberation of HRM (Shrivastava and Shaw, 2003). The permutations and combinations of automation, information and collaboration signify by and large all the potentials of internet recruiting that are apt for rationalising the employer response for adoption. Nonetheless, to evade the pro-innovation bias (Jeyaraj et al., 2006c) it is important here to underline the fact that adoption is based on advantages only. Whether, internet recruiting actually capitulate these advantages or not is still receptive for the research.

Yet, there is not much expansion of a logical typology of factors for adoption; it is not easy to build up a comprehensive theory-based perspective of employer response towards adoption of technology. The aim of this paper is to make a humble attempt to reduce the dearth of such a typology and model in the literature by developing a conceptual outline for examining factors that influence employer for adoption and offering a model that establishes an impact of multiple factors of the responses. A comprehensive analysis of literature was conducted in order to identify the variables and the corresponding relationship among the constructs that had been speculated for the adoption of internet recruiting. The model proposed here (refer Figure 1), depicts the cause and effect relationship between the factors contributing to the phases of adoption which can lead to a specific action and their subsequent influence on employer response.

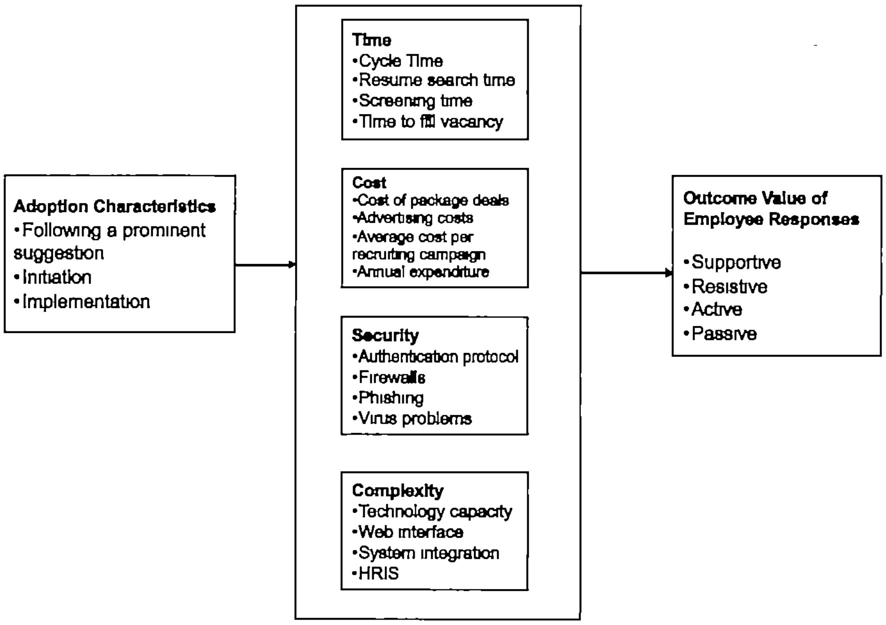
Adoption Characteristics
•Following a prominent suggestion
•Initiation
•Implementation
Time
•Cycle Time
•Resume search time
•Screening time
•Time to fill vacancy
Cost
•Cost of package deals
•Advertising costs
•Average cost per recruiting campaign
•Annual expenditure
Security
•Authentication protocol
•Firewalls
•Phishing
•Virus problems
Complexity
•Technology capacity
•Web interface
•System integration
•HRIS
Outcome Value of Employee Responses
•Supportive
•Resistive
•Active
•Passive

Figure1: Model of Influencing Factors

Time, Cost, Security, Complexity Model (T C S Cp)

Subsequent to adoption of internet recruiting, the employers can have numerous reactions with them. They can cut down the duration which is involved in acquiring applications from the prospective employees (time). They can slash down all costs that are involved in acquiring applications from the prospective employees (cost). There can be privacy problems that are involved in acquiring applications from the prospective employees (security) or there can be user-unfriendly tools that can hamper the processing involved (complexity).

The typology proposed here is based on the typology of Rusbult *et al.*, (1988) Exit, Voice, Loyalty, and Neglect model, and on Bourantas and Nicandrou (1998a) who proposed loyalty, compliance, voice and neglect model on post-acquisition employee behaviour. The proposed factors and the responses that an employer can develop towards them, differ depending upon how supportive or resistive and active or passive the adoption of internet recruiting is. Consequently, the model is developed along two dimensions i.e. supportive/resistive and active/passive (SPAR typology, refer Figure 2). The supportive/resistive dimension explains that responses which create influential factors for adoption are supportive if the employer acknowledges advancements that technology results or resistive if the employer averse to the changes. Thus, in this framework, time and cost are factors projected for success of the system as it is aiming to reduce the major resources involved in recruiting function, while security and complexity show employer opposition to the adoption. If the individual identifies change as a gain, acceptance may not be hard, but when it is a loss, he or she will do his or her best to resist change (Bourantas and Nicandrou, 1998b)

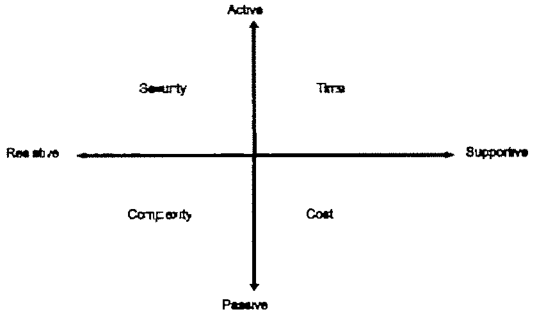

Figure 2: SPAR: A Typology of Employer Reaction to Adoption

The second dimension - activity/passivity - shows the impact of the internet recruiting on employer adoption. The active/passive dimension is defined in terms of the employer effort to maintain the usability of new technology after the adoption. Thus, time and security are active behaviours, while cost and complexity are passive.

The model, proposed here, put forward four possible factors: time, cost, security and complexity (TCSCp) that are influenced by SPAR.

Time *(T)* Time factor suggests that employer is influenced in an actively supportive approach towards the adoption, e.g., actively cutting down the duration involved in acquiring applications from the prospective employees, and also maintaining the usability of internet recruiting.

In terms of timeliness of actions taken by an employer during the recruitment process, Boswell, Roehling, LePine and Moynihan, (2003) have documented the importance of timely recruitment actions. Their result shows that receiving prompt responses from employers resulted in job candidates having a more positive view of the employer. Also, jobseekers find it less time-consuming to use the Internet than other traditional job-hunting avenues and it presents them with more information about the company and specific career opportunities. With this information, they can even decide whether they wish to contact the company to be considered for the position (Zall, 2000a).

Cost (C) The cost factor comes under the situation, when employers passively support the adoption, e.g. continue with the earlier method of recruitment by bearing the cost as previously, accepting the new method as it is and expecting to slash down the cost.

The reactions of employers having a positive attitude towards the adoption, but do nothing to show their support, are included in this category. For instance, larger organisations with thousands of applications per week can clearly save administration costs by investing in internet recruiting systems, also with growing organisational size things become more anonymous and unclear. Larger organisations have more information needs and therefore can take more advantages from the information function. While small organisations with few applications have difficulties in justifying such investments and employees in small organisations are usually known personally and HRM tend to be lucid (Strohmeier and Kabst, 2009). Thus, these employers may be indifferent about the adoption and they may behave in a passive manner.

Security (S) Security factor is an active resistance to the adoption that aims to alter the situation, e.g. employers oppose to use internet recruiting and express strong dissent for security issues.

Security is an issue which shows the users' evaluation as "obstacles" to computer technology adoption, hence employers work actively to change the situation or resist the changes imposed on them. Liebermann and Stashevsky (2002) had explained security on the validity of personal information stealing. This issue relates to jobseekers posting their re´sume´s to the job sites. For example, there are reported cases where some head-hunters are able to "unlock" corporate web sites and roam the site for staff directories, re´sume´s, photos, and organisational charts, which later are made on sale either to recruitment agencies, or directly to companies that may be interested (Galanaki, 2002).

Complexity (Cp) Here, because of complexity or user unfriendliness of the system the employers react in a passively resistive manner to the situation that has been formed before and after the adoption through reduced effort, increased disinterest and use of company time for personal business.

An employer choose this category of responses, when he/she believes that the dissatisfying conditions that have been formed after the adoption are not going to change.

Factors Influencing Employers for Adoption

The factors influencing employers and the corresponding responses for adoption are discussed in this section. An integrated, conceptual framework for the study and prediction of employer responses that leads to the phases of adoption of internet recruiting system has been developed on the basis of literature to determine the influential factors.

The present model proposes that employers response is primarily directed by the following factors: the effectiveness of the system, which is based on how much time is consumed by the employer before and after the adoption (T_x), and how much cost is incurred by the employer before and after the adoption (C_x); the competence of the system, which is based on the employer's trust on the technology in terms of security before and after the adoption (S_x), and the complexities in the system (Cp x), and finally on the outcome value of the response (O_A), that is the decision-implementation analysis for adoption. Based on above specifications, it can be said that, response A is a function of:

$$A = [O_A, T\,x, C\,x, S\,x, Cp\,x] \qquad (1)$$

Subsequently, each of these model parameters will be discussed in more detail.

Time (T_x) Employer reaction is dependent on effectiveness of the system which is measured through time consumed in acquiring applications from prospective employees. The timeliness (Tx) of actions taken by an employer during the recruitment process that affects the adoption decision of the employer is directed by the cycle time of the process (CT i) (Ghosh, 2007), resume search time involved (RST i) (NAS, 2006), screening time (ST i) (Hadass, 2003), and time to fill the vacancy (TFV i) (Dickmeyer, 2001). Therefore, Time (T x) can be a summation of:

$$T_X = \Sigma\,(CT\,i, RST\,i, ST\,i, TFV\,i) \qquad (2)$$

The equation is further elaborated in ensuing section.

Cycle Time (CT i) Cycle time is the time required to complete a process. The cycle time required to process a recruiting function might start with searching the potential applications and end with the call for interview. The overall process is made up of many sub-processes such as screening of relevant applications, short listing of applications, and selecting the applicants for interview. The cumulative cycle time of all of the sub-processes in the operation determines when the applicant agrees for the interview. Employer's reaction towards reducing the cycle time is actively supportive as it identifies and implements more efficient ways to do things. Reducing cycle time requires eliminating or reducing non-value-added activity, which can be done by adopting internet recruiting. This will have a significant impact on the organisation when implemented for e.g., reduced costs, increased throughput, streamlined processes, improved communications, reduced process variability, schedule integrity, improved on-time interviews and so on (Montana manufacturing center).

Resume Search Time (RST i) Internet recruiting such as online job boards, resume databases, and social network websites, allows employers to easily access online resumes of qualified candidates who are interested in the position's salary and location. Employers just need to type in simple keywords and results from multiple searches are displayed in seconds. This reduction in resume search time is not only useful for recruiting expert but is also extremely useful in researching candidate's profile, organizations, and finding job applications online company wise. Compared with the costs and time required to source resumes internally or through an executive recruiter, this service has become very popular with many client recruiting strategies.

Screening Time (ST i) Screening resumes is one of the most crucial processes involved in recruiting, particularly in a situation where the number of resumes outnumber the job openings. Screening is comparing one candidate's qualifications and credentials to those listed in the other resumes received. Some of the traditional devices used to screen resumes no longer bear the weight they once did. Still viable for mailed-in resumes, these are useless for electronic applications. Manual screening is not only time consuming and strenuous but also increases the expenses. Moreover, there is every possibility that the employer might miss a potential candidate. Hence, the recruiters need to be all the more cautious in choosing the right applications from the huge pool of resumes. In this time of electronic recruiting an automated resume screening tool can give that winning edge. It can easily screen resumes based on specific locations and skill sets. This also streamlines the resume screening process and save a lot of time and money.

Time to fill the Vacancy (TFV i) This measures the average number of days it takes for an organisation to hire a candidate for a job, from the day the job becomes available. The adoption of internet recruiting aids in the hiring of top talent that helps in reducing the time-to-hire and lowering of recruiting costs. The timely responses from employers' links results in the greater applicant attraction to a job that significantly reduced the time spent on each recruitment activity, and additionally smoothens the recruitment process (Chapman, Uggerslev, Carroll, Piasentin and Jones, 2005).

Cost (C_x) The effectiveness of the system is also measured through cost incurred in acquiring applications from prospective employees. Chapman and Webster, (2003); Stone, Lukaszewski and Isenhour, (2005) have conducted surveys of HR practitioners. The result of such surveys typically had found that internet recruiting (web sites) are viewed as a very effective recruitment method. In particular, web sites are perceived as generating a large number of job applicants at relatively low cost. The cost (C x) of actions taken by an employer during the recruitment process is directed by reduction in the cost of package deals (CPD i) (Lievens and Harris, 2003a), advertising cost (AdC i) (Zall, 2000b), average cost per recruitment campaign (AC/RC i) (SHRM survey) and annual expenditure (AE i) (Pin, Laorden, and Saenz-Diez, 2001), that affects the adoption decision of the employer. Therefore, Cost (C x) can be a summation of:

$$C_x = \Sigma\,(CPD\ i, ADC\ i, AC/RC\ i, AE\ i) \qquad (3)$$

Each of these variables will be discussed in more details in ensuing section.

Cost of Package Deals (CPD i) The package deals provided by different internet recruiting service providers enables the organisation to access advanced talent database. This helps recruiters to find, track, and manage potential employees and external candidates. Extensive search and matching functions make this talent database easy for recruiters to navigate. The database also improves their ability to manage prospects and find suitable candidates for open positions. The service providers offers everything that recruiters need to make administrative tasks easier, including functions that noticeably increases cost-effectiveness throughout the entire application process. The packages also provide unlimited internet job postings and interface that also makes recruitment campaign an easy and cost effective task.

Advertising Cost (AdC i) Internet advertising makes it easy for the organisations to put ads on several of the premier quality web sites whenever it want, at a very reasonable cost. This kind of benefit from internet advertising can do miracles for the business. It is cheap, but effective e-recruitment solution that provides lower cost than going to the individual job boards. Most of these internet advertising companies give three slots to advertise the vacancy that are sometimes even free. Most web sites promoting free internet advertising have features like classified ads submitter - to get an enormous exposure with instant result

Average Cost per Recruitment Campaign (AC/RC i) By adopting an online application system, it is possible to streamline the whole recruiting process and, in turn, reduce staffing hours and costs. Candidates are offered the option to apply online by going to a website which contains everything that is normally sent to applicants in the initial information pack. This includes details of the job, benefits of joining the organisation, eligibility criteria and a job application form. Candidates can complete the job application form on screen and send it to the organisation over the internet. Being electronic in nature, it automatically identifies candidates who fall below the minimum entry requirements. Personnel staff keeps candidates informed of their progress by email/internet, rather than by post.

Annual Expenditure (AE i) Recruitment through internet leads to reduce the cost involved in acquiring applications from potential candidates and hence reducing the annual expenditure of an organization. E-Recruitment method fills vacancies quicker with more effective candidates (Aberdeen Research Group, 2007). By using e-Recruitment tools, Retail Group Fat Face reported 84 per cent decrease in recruitment costs – and has cut its time to hire for store staff by a week.

Security (S x) The employer reaction is a function of competence of the system, which is based on the employer's trust on the technology in terms of security. The objective of security includes - protection of information and property from theft, corruption, or natural disaster, while allowing the information and property to remain accessible and productive to its intended users. Thus employer decision is intended towards system security by which sensitive and valuable information and services are protected. The factors that affect security (S x) of the system are dealt and maintained by authentication protocol (AP i) (Bartram, 2002), Firewalls (F i) (Lievens, and Harris, 2003b), Phishing (P i) and virus problems (VP i) (Benfield and Szlemko, 2006). Therefore, Security (S x) can be a summation of:

$$S_X = \Sigma\,(AP\ i,\ F\ i,\ P\ i,\ VP\ i,) \qquad (4)$$

Each of these variables is discussed as under.

Authentication Protocol (AP i) Authentication is a fundamental aspect of system security. It confirms the identity of any user trying to log on to a domain or access network resources. The authentication protocol addresses issues of exchange of information between the relying party and the user, protection of secret information by the user, relying party or trust-broker. In private and public computer networks (including the Internet), the process of authentication is commonly completed through the use of logon user identification and passwords, and the knowledge of the password is assumed to guarantee that the user is authentic (Ramzan, 2007). User IDs and passwords were called out for having much well-known vulnerability, and security analysts suggested that organisations should plan for stronger authentication for system administrators and other privileged users (Allen, 2007). While adopting internet recruiting employers' need to authenticate their websites and make sure that the job boards they are accessing are fully secured.

Firewalls (F i) Any computer or device connected to the Internet that is not properly protected is vulnerable to a variety of malicious internet intrusions and attacks. The likelihood of a malicious individual entering in computer increases significantly the longer the computer is on and is connected to the internet. A personal firewall will help protect the system from intrusion. Firewalls create a barrier between computer and the rest of the internet. A firewall can be a hardware device, a software application or a combination of the two. Firewalls can prevent malicious attacks and block certain types of data from entering your computer. They are often correctly configured with full logging enabled. This tends to generate massive amounts of data, but often they are referred to only when there is a problem. However, left un-tended they can become a problem in their own right. Before it is known, there can be loss of data and a shortage of disk space. Complete system failure soon follows and often the system has to be rebuilt from scratch.

Phishing (P i) Phishing is a type of deception designed to steal the valuable personal data. Scam artists might send millions of fraudulent e-mail messages that appear to come from trustworthy websites including timesjobs.com. Phishers are becoming more sophisticated in their deception techniques to lure employees to spoofed websites, as most employees cannot determine which is a valid site and which is a fake," said Geoff Haggar, VP Websense EMEA. This is one of the most notorious forms of internet fraud, and has seen a growth in recent years with the increase in email usage. Because it costs nothing to send out an email, it is possible to send out hundreds of thousands of emails within a short time. Criminals know that despite the fact that many people will ignore these emails, a small percentage of recipients will reply. Some will even use this information for identity theft. This threat creates a resistive attitude among the employers and do not let them to adopt internet recruiting.

Virus Problems (VP i) There are about 87,000 known computer viruses. Many viruses contain an 'electronic backdoor' which can be used to access any file on the computer, including credit card and bank details. To overcome the problem of viruses' organisations should install and maintain firewall and anti-virus protection. There is a need of an extra care for example, treating of any emails from an unknown or unrecognized source as suspicious, protecting the PC or laptop by using passwords and so on. Organisations should be more concerned and take a "layered" approach to protection by installing antivirus software and other security features on the computers, networks and e-mail. Layering is crucial because viruses use multiple methods to discover and exploit weaknesses in the computers, and then replicate themselves.

Complexity (Cp x) The competence of the system is also measured through complexity which occurs because of user-unfriendly tools that can hamper the processing involved in acquiring applications from prospective employees. Although, internet recruiting is expected to reduce the complexity, paper work and streamlined workflow with access to a larger amount of better organized information and a focus on resolving problems. Still there are times when it brings the complexities for the user, for example, technology capacity (TC i) (Singh and Finn, 2003), the quality of the Web interface (WI i) (Stovall, 2008), limited integration of the e-recruitment system (SI i) (Hogler, Henle and Bemus, 1993) and HRIS (HRIS i) (Frost, 1997). Therefore, Complexity (Cp x) can be a summation of

$$Cp_x = \Sigma\,(TC\ i,\ WI\ i,\ SI\ i,\ HRIS\ i) \qquad (5)$$

Technology Capacity (TC i) The challenges faced by organisations in implementing e-recruitment have included problems with the technology and difficulties in tailoring e-recruitment systems to meet the particular needs of their recruitment process. Other challenges have included problems with having to simultaneously operate both online and offline systems, and a lack of integration of e-recruitment systems and existing HR systems. Organisations are struggling to master standard and emerging technology, as well as to manage data silos and ill-suited tools. These challenges result in lost time, lost money, and poorly-informed decisions. A surprising number of organisations lack the capacity to employ some of the most standard online organising techniques.

Web Interface (WI i) The goal of human-machine interaction is to produce a user interface which makes it easy, efficient, enjoyable to operate a machine in the way which produces the desired result In order to avoid complexity, the interface should be made in such a way that the operator needs to provide minimal input to achieve the desired output, and also that the machine minimizes undesired outputs to the human. There are times when organisations without doing enough research, adopts internet recruiting software that are so complicated and hence creates passive resistance approach.

System Integration (SI i) Systems integration is the process of linking together different computing systems and software applications physically or functionally (Adusei, Kuljaca, Agyepong, 2010). As the e-recruitment market matures, there is more functional parity in recruitment automation. However, organisations are starting to move beyond basic recruiting automation towards overall effectiveness (Otter and Holincheck, 2009). This competitiveness in the market makes it more complicated to have most effective solution that supports industry and geographic needs as well as the challenges faced by corporate recruiting departments.

Human Resource Information System (HRIS i) The Human Resource Information System (HRIS) is a software or online solution for the data entry, data tracking, and data information needs of the Human Resources, payroll, management, and accounting functions within a business. The complexity in dealing with HRIS is the fact that, HR department lacks knowledge about HRIS and hence is not able to clearly elucidate the requirements of the system Poor need assessment is a continuation of this problem. Another problem is the lack of importance given to HR department in the organisations. In poorly managed implementations, the potential of HRIS is under-utilised. Another area of concern is that level of cooperation needed across various functions and divisions of the organisation for proper implementation of HRIS is also lacking (Krishnan and Singh, 2006).

Outcome value of the response (O_A)

If employer wants to lead the competition effectively, he/she need to be able to make good decisions and for that, decision-implementation analysis of prominent suggestions is to be done. Employer need to do this in a timely and well-considered way, and hence can lead to spectacular and well-deserved success. However, if poor implementations are made there are risks for failure. A response is reinforced positively when combined with timely decision experience, and negatively when combined with poor implementation. Thus, employer response is intended towards the maximization of timely decision and minimization of poor implementation (rational choice). The main assumption here is that certain behaviours are more likely to be expressed when they are related to past (Singelmann 1972). The decision value D for adoption *A* is defined as:

$$D_A = \Sigma(W_A d_A) \qquad (6)$$

where, d_A, represents the individual's subjective estimation of decision making for adoption $_A$, and w_A represents its subjective importance.

Reversible, experimental, trial & error, made in stages, are examples of possible decisions for a certain response.

The implementation value I *for adoption A* is defined as:

$$I_A = \Sigma(W_A i_A) \qquad (7)$$

where i_A, represents the subjective estimation of the poor implementation for adoption A, and W_A represents the importance of implementation.

Poor decisions, delayed implementation, dysfunctional thought, are examples of poor implementation for a certain response.

Simultaneously, employers also correlate previous method with new adoption (before and after). Through these correlations, attempts to react in a manner that allows them to maintain these reactions, while their mindsets are stabilized at a point which is believed as more "favorable" under the present method. Employers compare their reactions of new adoption to the reactions of previous method and estimate the decision-implementation of their reaction in comparison to that of previous method. Thus, the concept of comparison level (*CL*) of the theory of interdependence (Thibaut and Kelley, 1967) is incorporated in the model. The outcome value of reaction *A* is:

$$OA = (I_A - D_A) - CL \qquad (8)$$

On the basis of the above discussion, certain hypothesis can be developed that relate the description of employer response to the adoption. The following hypothesis is supported by the view point presented here.

H1: The higher the decision value of a certain factor (decision value of security and complexity) the more likely it is that the employers will engage in supportive approach (time, cost) and less in resistive approach (security, complexity).

H2: It is more likely for employers to be influence in a supportive way (time, cost) and less in a resistive way (security, complexity) when the level of effectiveness is high.

H3: It is more likely for employers to be influenced in an active way (time, security) and less in a passive way (cost, complexity) when the level of competence is high.

H4: The higher the outcome value of response about the adoption, the more likely it is that they will be influenced in a supportive way (time, cost) and less in a resistive way (security, complexity).

Discussion and Implications for Future Research

The objective of this paper was to offer an integrated model for studying and predicting factors influencing employer for adoption of internet recruiting. Such a model, which was missing from the literature, is vital for better insight and understanding the adoption phenomenon. The attempt in this paper has been intended for:

- developing a typology for factors influencing employer for adoption of internet recruiting by conceptualizing reaction patterns representing broader theoretical constructs, such as time, cost, security and complexity;
- In addition, it also explains the general outline for examining employer responses, by presenting the cause and effect relationship between the factors contributing to the phases of adoption which can lead to a specific action. This could better direct the various research efforts and support their cumulative effect.

However, the proposed model needs to be broadened up conceptually and theoretical elucidation and a detailed assessment of the typology of factor as well as their prediction are required. For example, employers can devise and prefer substitute factors to the adoption, which can represent consecutively further reaction and decision. Thus, the changing reaction aspect must be considered. As far as the "influential factors" are concerned, the proposed model is restricted in the assessment of one-way cause-effect relationships. In reality, most of these relationships are two-way, more complex, or indirect (Bourantas and Nicandrou 1998c). Moreover, among the judgmental variables which have been proposed here, there may be permutations and combinations that need further, careful investigation.

Despite of the above-mentioned shortcomings, the proposed model could be the starting point for future research in this area. The research on the internet recruiting is still in the nascent stage especially in Indian perspective. The literature on the subject is scarce and descriptive in nature with speculative inferences. There is a need to develop the understanding of how employers react to adoption, because for the success of adoption all parties involved need to make decision-implementation analysis. Without empirical research it is unfeasible to review the degree and the extent of the problem. Moreover, there is no study measuring employer behaviour and adoption patterns. There is a need to first examine and assess which factors are affecting employers causing them to react in a supportive or resistive way. On the other hand, it would be valuable to identify the factors and processes that support positive employer reactions and contribute to the "success" of the adoption. The model outlined in this article provides a conceptual framework and an agenda for future empirical research on influential factors and internet recruiting.

It is hoped that the proposed theoretical model and framework can be useful and stimulating for future research in this area.

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Impact of Training and Development Programme on Productivity of Oil-Mills in Coimbatore District

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This report focuses on the training and development program given by the Oil-Mills in Coimbatore District. The survey was conducted in the District of Coimbatore by considering 120 sample respondents by adopting Tippets table. A well structured questionnaire was adopted to collect the requisite primary data The collected data were analyzed using statistical tools such as weighted average and chi-square analysis The study highlights the impetus of the training and development programme to improve the morale of the workers and productivity of oil mills at Coimbatore

Keywords: *Training and Development, Human Resource and Evaluation, Productivity Improvement*

Introduction

In the current scenario, identifying a good training evaluation system is a major problem. Giving training to the right employees at right time will lead to a smooth running of administration and enrich the credential of the organization. Derivation for such a situation purely depends upon the power of the lead manager in industry. Adequate training will help a resource for better production.

As group work gains recognition, emerging group support technologies raise questions about the merits of these systems relative to group performance and return on investment. Business case variables of efficiency, quality, effectiveness, customer satisfaction and decision-making are useful in measuring the potential contribution that group support technologies offer. Such a framework is useful to business decision-makers and researchers interested in the deployment of these technologies in complex business environments

For a smooth activity of every organization the management is expecting the following skills from each employee:

Technical skills, communication skills, decision making skills, problem solving skills, time management skills, employee turnover, absenteeism, wastage, efficiency of production. The study concentrates on the training of the above said skills and application of their skills (which has been acquired through the training) for the improvement of the organization. As all the organizations need personnel's with the aforesaid skills, it becomes the duty of the management in deed, as it needs it, so this makes sense why the training and the evaluation of the training methods are important and mandatory.

Literature Review

It also outlines briefly some key findings about training from the literature. Donald Kirkpatrick (1996) on supervisory training program; Kirkpatrick (1998) on reaction to the training program; Phillips (1991) on evaluation and measurement methods on training; Holli and Calabrese (1998) on communication and education skills for professionals; Boulmetis and Dutwin (2000) on the ABC's of evaluation timeless techniques for program and project managers; Schalock (2001) on outcome based evaluation; Stufflebeam (2001) on audience object merit assessment; Phillips (1991) training evaluation and measurement methods; America Society for Training and Development (ASTD) has studied on nationwide measurement and evaluation to human resources department in US etc.

Objective

Following are the prime objectives of the study:

(i) To find out the opinion of training and development program.

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(ii) To assess the level of up gradation obtained by the respondents during the Training Period.

(iii) To measure the impact and efficiency of the training.

Sampling

Stratified Random Sampling technique is adopted in this study. The entire list of Oil Mills in Coimbatore District is collected which constitutes 245 in number. Of which, the researcher has collected the data from 10 Oil mills based on the criteria which is functioning for a period of 20 years. Then 120 sample respondents were collected based on the Tippet's table random numbers. The following tools have been applied to assess the impact of training and development program on the functioning of Oil mills in Coimbatore District:

a) Percentage analysis
b) Range
c) Two – way Analysis
d) Chi-square test and
e) Weighted Average Scoring

Hypotheses

The following null hypotheses have been framed by the researcher for the purpose of analysis.

(i) There will be no significant relationship between the trainer's communication ability and the improvement of technical skills and communication skills of the employees.

(ii) There will be no significant relationship between the trainer's ability to clear doubts and the Improvement of technical skills of the employees.

(iii) There will be no association between evaluation of training and development program with the following factors:

a) Age of the respondents
b) Sex of the respondents
c) Qualification of the respondents
d) Designation of the respondents
e) Salary of the respondents
f) Experience of the respondents and
g) Type of training program offered.

Results and Discussion

Table 1: Opinion on Behavioral Aspects of Trainer

Opinion	Communication Ability	Ability to Clear Doubts	Trainer's Behaviour	Training of Technical Skills
Very Good	12.5	19.2	31.7	18.3
Good	85.8	74.2	63.3	77.5
Average	1.7	5.8	5.0	4.2
Poor	0	0.8	0.0	0.0
Very Poor	0	0.0	0.0	0.0
Total	**100.00**	**100.0**	**100.0**	**100.0**

(Figures in the parenthesis are in percentage)

It is clearly identified from the table that the trainer's communication ability is good, and it is understood by all the respondents. All the respondents have no doubts regarding the training which the trainer handled. The behvaiour shown towards the respondents by the trainer was really good. The respondents feel that the trainer is technically good for handling program.

Table 2: Opinion on Situational Management of Respondents

Opinion	TRAINING on (Percentage)			
	Communication Skills	**Decision Making**	**Problem Solving**	**Time Management**
Strongly Agree	10.0	1.7	15.0	40.0
Agree	66.7	25.0	69.2	55.0
Neutral	23.3	73.3	15.8	4.2
Disagree	0.0	0.0	0.0	0.8
Strongly Disagree	0.0	0.0	0.0	0.0
Total	**100.0**	**100.0**	**100.0**	**100.0**

(Figures in the parenthesis are in percentage)

The above table shows that the training given on communication skills to the respondents were agreeable. The training on decision making was neutral. Respondents were fully agreeable that the training on problem solving was up to their expectation. Respondents felt that the time management was also agreeable.

Table 3: Opinion on Personal Effectiveness of the Respondents

Opinion	Training on (percentage)			
	Employee Turnover	**Absenteeism**	**Wastage**	**Efficiency of Production**
Increase	0.8	0.8	1.7	100.00
Neutral	5 0	15.8	2.5	0
Decrease	94.2	83.3	95.8	0
Total	**100.0**	**100.0**	**100.0**	**100.00**

(Figures in the parenthesis are in percentage)

Due to the good impact of the training, employee turnover is very less while compared with previous years Absenteeism, wastage, and efficiency of production are considered to have decreased.

Table 4: Weighted Average Scores for Employee and Trainers Skills

Skills	3	2	1	Total	Weighted Average	Rank
T&D Program on Employee Skills						
Technical skills	22	93	5	257	42.83	2
Communication	12	80	28	224	37.33	4
Decision Making	2	30	88	154	25.67	5
Problem Solving	18	83	19	239	39.83	3
Time Management	48	66	6	282	47	1

Training Imparted By The Trainer						
Communication ability	15	103	2	253	42.16	3
Ability to clear doubts	23	89	8	255	42.5	2
Behavior	38	76	5	272	4533	1

(Figures in the parenthesis are in percentage)

The training and development program on the employee skills will enable the employees to improve their technical, communication, decision making, problem solving and time management.

Respondents felt that the trainer was really having good communication, ability to clear doubts and the behavior displayed was really good.

Table 5: Range of Training Effectiveness and Sex of the Respondents

S. No.	Sex	No of Respondents	Average Satisfaction Source	Range
1	Male	67	54.60	10 – 70
2	Female	53	54.71	10 – 100
	Total	**120**	**54.64**	**10 – 100**

(Figures in the parenthesis are in percentage)

There are 67 respondents having their satisfaction range from 10 -70. Their average satisfaction is out of 67, 30 respondents have their score above average and 37 respondents have their satisfaction below average.

There are 53 respondents having their Satisfaction range from 10-100. Their average satisfaction is out of 53, 26 respondents have their score above average and 27 respondents have their satisfaction below average.

Table 6: Range of Training Effectiveness and Qualification of the Respondents

S. No.	Qualification	No of Respondents	Average Satisfaction Source	Range
1	Upto 9th Std	36	54.17	10 – 100
2	SSLC	42	51.67	10 – 95
3	HSC	22	51.59	20 – 90
4	Degree/Diploma	20	56.25	10 – 100
	Total	**120**	**53.16**	**10 - 100**

(Figures in the parenthesis are in percentage)

The above table reveals that, the average satisfaction varies from 56.25 to 51.59 in training and development program. There are 36 respondents having their Satisfaction range from 10-100. Their average satisfaction is out of 36, 18 respondents have their satisfaction above average and 18 respondents have their satisfaction below average. There are 42 respondents having their Satisfaction range from 10-95. Their average satisfaction is out of 42, 20 respondents have their satisfaction above average and 22 respondents have their satisfaction below average. There are 22 respondents having their Satisfaction range from 20-90. Their average satisfaction is out of 22, 10 respondents have their satisfaction above average and 12 respondents have their satisfaction below average. There are 20 respondents having their Satisfaction range from 10-100. Their average satisfaction is out of 20, 10 respondents have their satisfaction above average and 10 respondents have their satisfaction below average.

Table 7: Range of Training Effectiveness and Designation of the Respondents

S. No.	Designation	No of Respondents	Average Satisfaction Source	Range
1	Skilled A	12	57.5	20 – 100
2	Skilled B	20	56.25	10 – 100
3	Semi Skilled	88	53.86	10 - 100
	Total	**120**	**54.62**	**10 - 100**

(Figures in the parenthesis are in percentage)

The above table reveals that, the average satisfaction varies from 53.86 to 57.5 in training and development program. There are 12 respondents having their Satisfaction range from 20-100. Their average satisfaction is out of 12, 6 respondents have their satisfaction above average and 6 respondents have their satisfaction below average. There are 20 respondents having their Satisfaction range from 10-100. Their average satisfaction is out of 20, 10 respondents have their satisfaction above average and 10 respondents have their satisfaction below average. There are 88 respondents having their Satisfaction range from 10-100. Their average satisfaction is out of 88, 40 respondents have their satisfaction above average and 48 respondents have their satisfaction below average.

Table 8: Range of Training Effectiveness and Salary of the Respondents

S. No.	Salary (in Rs.)	No. of Respondents	Average Satisfaction Source	Range
1	1000- 2000	0	-	-
2	2001 – 4000	31	58.064	15 – 100
3	4001 – 6000	89	53.932	10 – 100
4	6001 & Above	0	-	-
	Total	**120**	**54.99**	**10 - 100**

(Figures in the parenthesis are in percentage)

The above table reveals that, the average satisfaction varies from 53.932 to 58.064 in training and development program. There are 31respondents having their Satisfaction range from 15 – 100. Their average satisfaction is out of 31, 15 respondents have their satisfaction above average and 16 respondents have their satisfaction below average. There are 89 respondents having their Satisfaction range from 10 – 100. Their average satisfaction is out of 89, 45 respondents have their satisfaction above average and 44 respondents have their satisfaction below average.

Table 9: Range of Training Effectiveness and Experience of the Respondents

S. No.	Experience	No. of Respondents	Average Satisfaction Source	Range
1	Up to 5 Years	4	51.25	20 – 90
2	6 - 10 Years	43	52.79	10 – 95
3	11 - 15 Years	59	54.24	10 – 100
4	15 Years and above	14	57.14	20 –100
	Total	**120**	**53.95**	**10 – 100**

(Figures in the parenthesis are in percentage)

The above table reveals that, the average satisfaction varies from 57.14 to 51.25 in training and development program. There are 4 respondents having their Satisfaction range from 20 – 90. Their average satisfaction is out of 4, 2 respondents have their satisfaction above average and 2 respondents have their satisfaction below average. There are 43 respondents having their Satisfaction range from 10 – 95. Their average satisfaction is out of 43, 10 respondents have their satisfaction above average and 13 respondents have their satisfaction below average. There are 59 respondents having their Satisfaction range from 10 – 100. Their average satisfaction is out of 59, 30 respondents have their satisfaction above average and 29 respondents have their satisfaction below average. There are 14 respondents having their Satisfaction range from 20 – 100. Their average satisfaction is out of 14, 7 respondents have their satisfaction above average and 7 respondents have their satisfaction below average.

Table 10: Type of Training Program

S. No.	Type of training program	No of Respondents	Average Satisfaction Source	Range
1	On-the-job training	103	54.07	10 - 100
2	Off-the-job training	17	57.35	20 - 95
	Total	**120**	**54.52**	**10 – 100**

(Figures in the parenthesis are in percentage)

The above table reveals that, the average satisfaction varies from 57.35 to 54.07 in training and development program. There are 103 respondents having their Satisfaction range from 10 -100. Their average satisfaction is out of 103, 50 respondents have their satisfaction above average and 53 respondents have their satisfaction below average. There are 17 respondents having their Satisfaction range from 20 - 95. Their average satisfaction is out of 17, 10 respondents have their satisfaction above average and 7 respondents have their satisfaction below average.

Table 11: Level of Satisfaction on Training and Age of Respondents

S.No	Age	Level of Satisfaction			Total
		Low	Medium	High	
1	20-25 Yrs	0	0	1 (100.00)	1
2	26-30 Yrs	10 (31.25)	12 (37.5)	10 (31.25)	32
3	31-35 Yrs	8 (17.18)	20 (45.45)	16 (36.36)	44
4	36 Yrs & above	15 (34.88)	8 (18.60)	20 (46.51)	43
	Total	33	40	47	120

(Figures in the parenthesis are in percentage)

The above table indicates that, the respondents between the age group of 20-25 yrs and most of the respondents between 36 yrs and above are having high level of satisfaction under training and development program followed by 100 and 46.51 per cent of the respondents in the age group of 20-25yrs and 36 yrs & above. Under low level of satisfaction there are 34.88 per cent of the respondents falling under the age group of 36 yrs and above. On the whole, most of the respondents are having medium level of satisfaction regarding training and development program.

Table 12: Level of Satisfaction on Training and Sex of Respondents

S.No	Sex	Level of Satisfaction			Total
		Low	Medium	High	
1	Male	20 (29.85)	30 (44.77)	17 (25.37)	67
2	Female	15 (28 30)	25 (47.17)	13 (24.53)	53
	Total	35	55	30	120

(Figures in the parenthesis are in percentage)

The above table indicates that, the male respondents are having high level of satisfaction under training and development program followed by 25.37 per cent of the respondents falling under male gender. Under low level of satisfaction there are 29.85 per cent of the respondents falling under male gender. Under medium level of satisfaction there are 47.17 per cent of the respondents falling under female gender regarding training and development program.

Table 13: Level of Satisfaction on Training and Qualification of Respondents

S.No	Qualification	Level of Satisfaction			Total
		Low	Medium	High	
1	Upto 9th Std	10 (27.78)	12 (33.33)	14 (38.89)	36
2	SSLC	13 (30.95)	11 (26.19)	18 (42.86)	42
3	HSC	6 (27.27)	4 (18.18)	12 (54.55)	22
4	Degree/Diploma	8 (40)	5 (25)	7 (35)	20
	Total	**37**	**32**	**51**	**120**

(Figures in the parenthesis are in percentage)

From the above table one can infer that, the respondents who have completed HSC are having high level of satisfaction under training and development program followed by 54.55 per cent of the respondents who have completed HSC level of education.. Under low level of satisfaction there are 40 per cent of the respondents who have completed Degree/ Diploma. On the whole, most of the respondents are having medium level of satisfaction regarding training and development program.

Table 14: Level of Satisfaction on Training and Designation of Respondents

S. No.	Designation	Level of Satisfaction			Total
		Low	Medium	High	
1	Skilled A	6 (50)	2 (16.67)	4 (33.33)	12
2	Skilled B	8 (40)	5 (25)	7 (35)	20
3	Semi Skilled	24 (27.27)	36 (40.91)	28 (31.82)	88
	Total	**38**	**43**	**39**	**120**

(Figures in the parenthesis are in percentage)

The above table reveals that, the respondents who are coming under Skilled B category are having high level of satisfaction under training and development program followed by 35 per cent of the respondents who are Skilled B Category. Under low level of satisfaction there are 50 per cent of the respondents who Skilled A Respondents. On the whole most of the respondents are having medium level of satisfaction regarding training and development program.

Table 15: Level of Satisfaction on Training and Salary of Respondents

S. No.	Salary (Rs.)	Level of Satisfaction			Total
		Low	Medium	High	
1	2001 – 4000	10 (32.26)	15 (48.39)	6 (19.35)	**31**
2	4001 – 6000	25 (28.09)	35 (39.33)	29 (32.58)	**89**
	Total	**35**	**50**	**35**	**120**

(Figures in the parenthesis are in percentage)

The above table reveals that, the respondents who are getting salary between 4001 – 6000 are having high level of satisfaction under training and development program. 32.58 per cent of the respondents are falling under this category. Under low level of satisfaction there are 32.26 per cent of the respondents who are getting salary from 2001 - 4000. On the whole most of the respondents are having medium level of satisfaction regarding training and development program.

Table 16: Level of Satisfaction on Training and Experience of Respondents

S.No	Experience	Level of Satisfaction			Total
		Low	Medium	High	
1	Up to 5 Years	1 (25)	1 (25)	2 (50)	**4**
2	6 -10 Years	12 (27.91)	13 (30.23)	18 (41.86)	**43**
3	11-15 Years	18 (30.51)	12 (20.34)	29 (49.15)	**59**
4	15 Years and above	5 (35.71)	6 (42.86)	3 (21.43)	**14**
	Total	**36**	**32**	**52**	**120**

(Figures in the parenthesis are in percentage)

From the above table one can infer that, the respondents who have up to 5 yrs are having high level of satisfaction under training and development program followed by 50 per cent of the respondents who have upto 5 yrs of experience. Under low level of satisfaction there are 35.71 per cent of the respondents who have 15 yrs and above experience. On the whole, most of the respondents are having medium level of satisfaction regarding training and development program.

Table 17: Level of Satisfaction on Training and Experience of Type of Training Program

S. No.	Type of Training Program	Level of Satisfaction			Total
		Low	Medium	High	
1	On-the-job training	23 (22.33)	30 (29.13)	50 (48.54)	**103**
2	Off-the-job training	5 (29.41)	4 (23.53)	8 (47.06)	**17**
	Total	**28**	**34**	**58**	**120**

(Figures in the parenthesis are in percentage)

From the above table one can infer that, the respondents who are all in the On The Job Training having high level of satisfaction under training and development program followed by 48.54 per cent of the respondents who are all in the on the job training Under low level of satisfaction there are 29.41 per cent of the respondents are in the Off the job training. On the whole, most of the respondents are having medium level of satisfaction regarding training and development program.

Table 18: Assessment of Training Effectiveness - chi – square

Evaluation of Variables in Relation to Training and Development Program	Degrees of Freedom	Calculated Chi-Square Value	Table Chi-square Value	Result
Age of the respondents	6	12.6	10.05	NS
Sex of the respondents	2	5.99	0.0696	NS
Qualification of the respondents	6	12.6	3.087	NS
Designation of the respondents	4	9.49	4.823	NS
Salary of the respondents	5	9.49	4.823	NS
Experience of the respondents	6	12.6	4.796	NS
Type of training program of the respondents.	2	5.99	0.482	NS
Technical skills of the employees	4	11.950	9.48773	S*
Communication skills of the employees	4	16.825	9.48773	S*
Clearing doubts and the improvement of technical skills of the employees.	6	26.203	12.59159	S*

* Significant at 5% level. (Figures in the parenthesis are in percentage)

The results of the chi-square test reveals that there is no significant relationship between training and development program with age, sex, education qualification, income level, and experience. On the contrary to the above there is a relationship between the trainer and the communication skills, technical skills, and clarifying doubts of the respondents at 5% level of significance.

Findings

(i) 85.8 per cent of the respondents are having the good opinion about the trainer's communication ability.

(ii) 74.2 per cent of the respondents think that the trainer's ability to clear doubts is good.

(iii) 63.3 per cent of the respondents think that the trainer's behavior is good.

(iv) 77.5 per cent of the respondents agree that the technical skills have improved by the training.

(v) 66.7 per cent of the respondents agree that the training program helps to improve the communication skill.

(vi) Only 25 per cent of the respondents agree that the training program helps to improve their decision making capability.

(vii) 69.2 per cent of the respondents agree that the training program helps to improve their problem solving capability.

(viii) 55 per cent of the respondents agree that the training program helps to manage their time.

(ix) 94.2 per cent of the respondents feel that the employee turnover has decreased.

(x) 83.3 per cent of the respondents feel that the absenteeism is negligible.

(xi) 95.8 per cent of the respondents feel that the wastage is less.

(xii) All the respondents feel that the training program helps to improve the efficiency of the production.

Suggestions

(i) Group discussion and case studies can be given for all the respondents for the further development in the training and development.

(ii) A video camera can be used to record the proceedings of the training program, so that the trainer and the respondents can improve further in the coming training programs.

(iii) Experts can train the respondents through video conferencing.

(iv) Pre training and Post training assessment can be implemented for the betterment of the respondents.

Conclusion

Human resource is considered as the most important resources of all other resources. Bill gates in an interview stated that employees are the asset of the Microsoft. The human resource can be effectively put at work by means of proper training and development. The training and development program are the instruments which determine the efficiency of the employee, hence result in profit. The Oil Mills in Coimbatore District comprises of good team of employees but inculcating proper training and development results in high profit.

As a part of the developmental activity in Human Resources, the research is focused on the training activity. Training is a best way to make a person more knowledgeable. Considering this as a platform, the research has been surveyed in all the categories of the respondents. The research can be extended by not just giving the training to those persons who are working in the organization. They may also be evaluated suitably to know the effectiveness of the training. In this case, an evaluation sheet may be provided for evaluating those who have undergone the training.

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A Study on Perception of Trainers regarding Effectiveness of Training Programmes in Banking Sector

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In the context of training in banking sector, the present study attempts to develop a reliable and valid scale to measure the trainer's perceptions towards training programmes conducted in the banking sector. The data collected from a sample of 125 trainers, on analysis, results in a 13-item scale with Cronbach's alpha value 0.86 and the reliability of subscales ranging from 0.86 to 0.64. The validated instrument, based on construct validity, comprises of five dimensions: behavioural aspect, interpersonal aspect, desired outcomes, daily jobs and related issues, and knowledge. Regression analysis shows the relative significance of various dimensions with behaviour aspect having the maximum significance. Finally, the paper discusses the applicability of the scale.

Key-words: *Trainers, Banking Sector, Perception, Training Programmes*

Introduction

Training and development activities have caught the attention of corporate organizations and public sector units alike. Attempts have been made regularly (and rapidly) over the past three decades to understand the nature of these activities. While some have confined it to simply "imparting of specific skills, abilities and knowledge to an employee" Ashwathappa (2008), others have given more details of these activities.

Today, training is widely-recognized as one of the major benefits that employees look forward to experiencing. After all, training programs are meant to maintain, update and upgrade one's skills throughout one's employment. In several fields and areas, including management, these training programs are known as professional development programs Miller (2009). Training programs have become a routine activity and continuous research is going on in this field, as in other areas of management.

The focus shifts to trainers and managers who are actually responsible for delivering training and development programmes Goldwasser (2001). Empirical evidence for the above has been provided by (Aragon et al., 2003) who conducted a study of 453 organizations in Europe. Their findings indicate "on-the job" method of training with trainers from within the organization and training sessions being held within the premises was more useful. These organizations have reported higher productivity and overall effectiveness.

Trainers have a big responsibility in the sense that they need to nurture their skills in order to give and receive feedback so that they can develop better communication with trainees. They must always keep in mind that the main purpose of training and development programmes is to enhance performance. While providing feedback, trainers are expected to clearly point out the actual performance of trainee and explain the consequences. This should be followed up with an attempt to empathize with the trainee and suggestions for improvement. Trainees would definitely feel better in case of a good feedback "and if they are praised in public when appropriate and criticized in private" Lucas (1994).

The role of trainer thus assumes extreme significance in organizations. The demand for good trainers and training specialist becomes quite clear from this and organizations have set up training departments and training colleges with the sole purpose of providing quality trainings to existing and new employees. This is typically true for banking sector as banks have dedicated training centers for bank employees. Actually, trainer's skills and their style of helping the employees learn are very important in banking sector Barman and Kumar (2009) and a "sort of benchmark

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has been provided to be used by trainers in training programmes specially ethics" Gopinath (2009). Trainers, in banking sector, mostly take enhanced learning as a parameter of successful training against increased performance Berge (2008).

Gupta (1987) has emphasized on the need to bridge the gap between theoretical examples and actually practice by facilitating the trainer and trainees to gel together better specifically in rural banking while Liu and Batt (2007) found that performance depends a lot on actually who is the trainer- a superior or a colleague. Trainers need nowadays to be abreast with latest technology, especially in banking sector, as the idea of virtual trainer in most organizations is fast picking up (Senthamil et al., 2009). Everything is present and the job of trainer is to guide the trainee to the right place Mahmood (2006). Mehrotra (2005) also reports that most people who have done well in banking sector have at least once been trainers in their careers. Therefore, the success of a training programme depends largely on their perceptions, skills and attitudes of trainers.

An article in T & D (2006) presents information on the learning and development program of ICICI Bank Ltd and the impact it had on performance of bank and its employees. With master trainers within the organization and a host of similar factors, it has become a truly global player.

It seems important to study the perceptions of both trainees and trainers about training programmes and their view points specially in banking sector. (Noe et al., 2003) categorically states that training is needed if employees do not perform despite other satisfactory factors. He says training can be expected to solve any number of problems related with learning process and one of the most significant reasons for loose performance is the absence of a comprehensive development programme. Earlier, Benham (1993) had echoed the same sentiments claiming individual development systems enhance performance and production. According to Jayashree and Sheela (2009), the context of growing complexity in the functioning of the organization there needs to be a comprehensive and paradigm shift in training and assessment dimensions. Further, Khan (2007) has described the impact of training on business performance. His findings indicate a positive co-relation between the two. Similarly, Storey (2002) has examined the influence of education, training and development policies on performance of mediums-sized companies in Great Britain.

Therefore, studies suggest, trainings have not only an impact on individual but also organizational performance. It becomes imperative to study what is the perception of trainers regarding training programmes since attempts have been made to study the trainee's perception in earlier studies (Weintraub and Martinaeu, 2002; Surgue et al., 2005 and Lucas, 1994).

Objectives

After an extensive review of literature it was found the opinion of people who are "on the other side" was not there. This refers to the people conducting these training like the trainers or line managers in the banking sector. The combined opinion of trainers/ managers (the providers) and the trainees can actually point out the right kind of training and development activities to be conducted. Thus the main objectives of this study were:

a) Understanding the perception of trainers regarding training programmes in banking sector.

b) To construct a scale for measuring this perception.

c) To analyze the extent of influence different variables have on the trainer's perceptions.

Research Methodology

The methodology is explained in the following sections·

Item Generation

The study of literature gave a better understanding of the key factors affecting training in banking sector. Moving further, a series of focus group interviews comprising open ended questions were conducted.

The purpose of these interviews was asking about the factors that play a vital role in training and development programmes and subsequent learning. Focus groups comprised trainers and training managers randomly selected from various banks. The trainers provided significant details which helped in compiling a list of variables that could influence training programmes. An attempt was made to extract the organisational and personal variables from the list. After collecting a host of organisational factors (numbering approximately 25), which probably affected the training programmes, a validation process was taken up. It included an analysis of inter-rater agreement, using an outside expert and the researchers. The number of factors was further reduced to 13.

Designing the Survey Instrument

Moving further, a structured questionnaire was formed and a pilot study was conducted to clarify the overall structure of the questionnaire. The suggested changes were incorporated in the questionnaire. The final instrument that came up had two different sections. In the first section demographic details of the respondents were collected. The second section, inculcating all thirteen variables, aimed at understanding trainer's perception of training programmes.

Sampling

The study was conducted in North India. The sample was drawn from the both public and private sector banks *through* random sampling, taking on from the sampling strategies described by Patton (1990). 6 public sector banks and 5 private sector banks were covered. The study was conducted in the North Indian states of Uttar Pradesh, Uttarakhand, Delhi and the union territory of Chandigarh. The cities covered included New Delhi, Lucknow, Kanpur, Allahabad, Varanasi, Ghaziabad, Dehradun and Nainital. A total of 220 questionnaires (20 for trainers in each banks) were administered personally and online. 30 questionnaires were received back at a response rate of 59.09 per cent. On further filtering, 125 questionnaires were found to be completely filled. After the data was collected and checked for completeness and accuracy it was fed into and analyzed with the help of statistical software SPSS 15.0. Table 1 shows the demographic profile of the sample.

Table 1: Demographic Profile of the Sample

Variable	N = 125	Percent
Gender		
Male	97	77.6
Female	28	22.4
Service (in years)		
<3	03	2.4
3-8	24	19.2
8-15	38	30.4
15+	60	48.0
Educational Status		
Graduate	22	17.6
Post Graduate	99	79.2
Any Other	04	3.2
Age		
<30	05	4.0
30-40	44	35.2
40-50	53	42.4
50-60	20	16.0
60+	03	2.4
Annual Income (in Lakhs)		
<1.5	03	2.4
1.5-3	13	10.4
3-5	41	32.8
5+	68	54.4
On Current Post (in Years)		
<1	24	19.2
1-3	35	28.0
3-5	30	24.0
5-8	10	8.0
8+	26	20.8

Construction of Scales

In order to develop a reliable and valid scale for measuring trainer's perceptions, the underlying factors were identified with the help of Factor Analysis. It helped in data reduction by grouping scale items into a few manageable factors and further development of scales to measure trainer's perceptions of training programmes in banking sector.

Before proceeding for further factor analysis, appropriateness of factor analysis needs to be assessed. This was done by examining sampling adequacy through Kaiser-Meyer-Olkin (KMO) statistic. Table 2 provides the SPSS output of data for factor analysis. A KMO value that is greater than 0.6 can be considered as adequate (Kaiser and Rice, 1974).

Table 2: KMO and Bartlett's Test Results for Trainer's Perception of Effectiveness of Variables

Kaiser-Meyer-Olkin Measure of Sampling Adequacy.		.739
Bartlett's Test of Sphericity	Approx Chi-Square	735.979
	df	78
	Sig.	.000

Bartlett test results show that the values are significant and thus acceptable. The items were then subjected to Principal Component Analysis with Varimax rotation and Kaiser Normalization and factors having Eigen values greater than one were retained. All the items had factor loadings above 0.45 (Hair, Anderson, Tatham and Black, 1995). Further, in order to assess the appropriateness of the data for factor analysis, the communalities derived from the factor analysis were reviewed. These were all relatively large (greater than 0.5), suggesting that the data set is appropriate Stewart (1981).

For the trainer's perception scale, five factors were extracted. The first group called as behavioural aspect included four items related to greater motivation of trainees, enhanced decision making, change in behaviour at workplace for the better and an increase in creativity and innovation. The second group related to interpersonal aspect contained proper interaction with bosses, enhanced relations with peers, better co-ordination among trainees at work place and compliance with norms. The third factor related to better salary and utility for promotion was named as desired outcomes. Daily jobs and related issues included the scale items related to better dealing with clients and customers and helpful in day to day office work and this formed the fourth factor. The fifth factor had only one scale item related to knowledge and it covered, understanding of concepts. Factors I, II, III, IV and V are taken to constitute the subscales and analyzed further, with the results shown in Table 3. These factors together explained 76.01 percent of the variance before rotation and 76.09 percent of the variance after rotation.

Table 3: Component Loadings after Varimax Rotation with Kaiser Normalization for Perception of Trainer's Variables

Factor					
Subscale/ item	**I**	**II**	**III**	**IV**	**V**
Behavioural Aspect (BA)					
Motivation	**.674**	.480	.162	062	.196
Decision making	**.847**	.204	.094	.018	-.185
Changed behaviour	**.646**	.279	.369	.232	.317
Creativity & innovation	**.739**	.039	427	138	.151
Interpersonal Aspect (IA)					
Interaction with bosses	418	**.702**	-.056	.219	-.067
Relations with peers	.405	**.711**	079	.072	-.110
Better co-ordination	-.097	**.751**	.333	417	.111
Compliance	.168	**.628**	.250	-.242	.496
Desired Outcomes (DA)					
Better salary	.182	.170	**.840**	.092	-.174
Useful for promotion	.212	.064	**.744**	-.014	070
Daily Jobs & Related issues (DJ)					
Better dealing	.081	.054	.141	**.871**	.005
Day to day office work	.131	182	-.067	**.776**	.177
Knowledge (KA)					
Understanding concepts	.024	-.019	-.097	.196	**.875**
Eigen value of the factor	4.93	1.63	1.22	1 10	1.01
Percent of variance explained by the factor before rotation	37.93	12.54	9.36	8.51	7.76
Percent of variance explained by the factor after rotation	20.11	18.28	14.07	13.61	10.02

The critical step involved in the development of a measurement scale is the assessment of the reliability of constructs. The results of the analysis are described below.

Reliability Analysis

Reliability of measurement scales was estimated by analysis of internal consistency and coefficient alpha Cronbach (1951). Considering the Cronbach's alpha coefficients, the reliability of the scale is fairly high. It is 0.86 for overall sample and for a measure to be acceptable, coefficient alpha should be above 0.7 Nunally (1978). Thus the scale has high overall reliability. Owing to multidimensionality variables, coefficient alpha was computed separately for all the dimensions identified. For the subscales the coefficient ranges from 0.64 to 0.86. Three subscales are found to be of moderate reliability. The inter item correlations vary across scales. The reliability of subscales is given in Table 4.

Table 4: Description and Reliability Analysis of Subscales for Trainer's Perception of Training Variables

Statistics/ Variables	Number of items	Mean	Variance	Cronbach's Alpha	Lowest inter-item Correlation	Highest inter-item Correlation
BA	4	3.55	0.81	0.86	0.26	0.46
IA	4	3.65	0.66	0.77	0.36	0.39
DA	2	2.88	1.02	0.64	0.34	0.58
DJ	2	4.28	0.27	0.66	0.03	0.05
KA	1	-	-	-	-	-

In order to determine the relative importance of the factors they were subjected to regression analysis. The average score of the different factors was regressed on the overall trainer's perception scores. The beta coefficients provided the relative importance of factors. The factor with highest beta coefficient is considered to have the maximum influence on trainer's perception while the one with the second highest beta coefficient stands second in terms of relative significance and so on. The results of regression analysis are summarized in the Table 5.

Table 5: Regression Analysis Results for Relative Importance of Trainer Perception Dimensions

Independent Variable	R2 / Sig	Beta	T	Sig	Order of Importance
Behavioural Aspect (BA)	.697/.000	.305	3.740	.000	1
Interpersonal Aspect (IA)		.165	2.033	.044	3
Desired Outcomes (DA)		.146	1.798	.045	4
Daily Jobs & Related issues (DJ)		-.001	-.010	.992	5
Knowledge (KA)		.264	3.241	.002	2

Constant=4.464 (p=0.000)

The overall regression model is significant. For the scale F = 6.371, $p < 0.001$ with 69.7 per cent variance explained by the indentified factors

The results of the above table can be expressed in the form of the regression equation

TP=4.54+.305BA+.165IA+.146DA-.001DJ+.264KA (where TP stands for trainer's perceptions).

According to this equation, the behavioural aspects like increased motivation, better decision making, change in behaviour for the better and evidences of increased creativity outweigh all other factors in the impact on trainer's perception. Daily Jobs and related issues are the last in order of importance and at the same time they are statistically insignificant and negatively correlated with trainer's perception. Strangely enough, the knowledge aspect has a significant bearing on trainer's perception. The trainers perceive knowledge of concepts as being a key outcome of training and learning while they feel daily jobs and related issues are more a result of hands on experience than training.

Discussions and Conclusions

From the above analysis a few clear points of interest emerge. Actually, a sort of benchmark has been provided to be used by trainers in training programmes Gopinath (2009) and this is validated by the analysis above They use a host of parameters to gauge the effectiveness of training programmes.

The dimensions of performance with respect to training for bank employees can be identified by a set of four factors namely interpersonal and soft issues, daily jobs, desired outcomes and knowledge of concepts. Within these factors are grouped many other dimensions as perceived by trainers.

Again, trainers, in banking sector, mostly take enhanced learning as a parameter of successful training against increased performance Berge (2008). This is also validated as knowledge aspect occupies such an important place in their perception. It has a close and significant relation to effectiveness of training programmes and this confirms the findings of Tapanya (2004) has who defining performance for bank employees by mentioning basic understanding of banking concepts and ideas.

The desired outcomes are more on the side of trainees and trainers perceive it as an expectation that bank employees have as a 'by product' of training. However, since most banks have a fixed policy related to promotion and salary hike, trainers view it of comparatively little significance while gauging the effectiveness of a training programme.

The day to day office work and better dealing with clients (grouped as Daily Jobs and Related issues) do not find favour with trainers when it comes to the effectiveness of a training programme. The possible reasons are trainers feel these are more routine things that are better learnt at work place through observation and experience than through formal training programmes. Actually, it appears, trainers in banking sector feel training programmes are more in imparting soft skills and concepts of banking. This explains why behavioural aspect and knowledge rank so high in the effectiveness of training programmes.

Trainers have different perceptions relating to effectiveness of training programmes However, the trainer's view about training programmes for bank employees is largely satisfactory and they consider these programmes vital for their performance. This is true for both private and public sector banks. Trainers would be more satisfied if they are given a say in designing these programmes so that they can deliver it to their (and bank employees) satisfaction. This would give them a greater say and freedom in imparting trainings which in turn would affect trainee performance.

All trainers have themselves undergone trainings and most of them found it helpful in sharpening their training skills. In fact, almost all banks have a policy that employees at various levels have to undergo trainings at fixed time intervals. This is true for people engaged in imparting trainings and this helps them to train other employees.

To sum up, trainers feel training programmes in banking sector are useful and are successful when they tend to improve and enhance behavioural and interpersonal skills. They also feel training programmes should help in building up knowledge of banking concepts and understanding banking system and specific bank policies. Although salary and promotion find a mention they are more of by-products in the eyes of trainers.

Future Scope of Study

The future work in this particular area can focus on the following aspects:

a) Since this study has been conducted in select cities North India, it can be further extended to other places.

b) The scale designed for understanding trainer's perceptions can be further empirically tested with a larger sample size.

c) A comparative analysis can be done on the perceptions of trainers and trainees/employees in banking sector.

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Compliance Report

Below, please find the details of changes made in the paper titled "A Study on Perception of Trainers regarding Effectiveness of Training Programmes in Banking Sector" as per the recommendations of the reviewer(s):

(i) Comment- Researcher should add more relevant literature review in the present area of research and then research gap should be found out.

Action- Reported three more studies that are relevant in the context of the current paper. Research gap becomes clearer after quoting these studies.

(ii) Comment- Need to mention specific objectives of research.

Action- This has been done. The objectives are listed in three points under the heading "OBJECTIVES."

(iii) Comment- Researcher should provide detail sampling procedure with which state and cities included in the sample selection.

Action- This has been done and is italicized under the section on "SAMPLING."

(iv) Comment- Need to improve the language in research methodology section.

Action- This has been done and is italicized in the paper under the section of "RESEARCH METHODOLOGY"

(v) Comment- Researcher should also mention future scope of research at the end of paper.

Action- This has been done by adding a separate heading "Further Scope of study" at the end of the paper.

(vi) Comment- Researcher should derive the research question for the present research.

Researcher should attach pilot test questionnaire and final tested questionnaire.

Action- As discussed with Dr. Sarkar over the telephone, these are not required and will unnecessarily increase the length of the paper.

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What's Wrong with Misleading Advertising? - An Empirical Investigation

Rishi Raj Sharma[1] **and Subhash Chander**[2]

Advertising is widely criticised not only for the role it plays in selling the product but also for the way it influences our society. In the era of cut-throat competition, the advertisers resort to certain practices such as puffery, deception, etc. and this leads to misleading advertising. The present study examines the ethical issues involved in misleading advertising as perceived by the respondents. This study attempts to explore the various attributes that constitute misleading advertisement. The central issue of the ethical discussion is to determine the various factors revealing the perceptions of the respondents towards the issue of misleading advertising as a whole. The sample of 460 respondents was drawn from the major districts of Punjab, one of the prosperous states of India, and the Union Territory of Chandigarh. A self-administered questionnaire was used to collect the data. The scale reliability was tested and factor analysis was used. The study reveals that the most of the respondents are well aware of the various unethical practices of misleading advertisements and perceive these as untruthful business. There are also a few respondents who feel that the exaggeration in advertising may be allowed as a permissible lie. The study provides an ethical implication to the advertisers, who are in the business of making profits, and leaving a word of caution for them to re-evaluate their communication strategies to come out with a new equation of advertising maintaining the balance of professionalism and ethics.

Keywords: *Consumer Consciousness, Deception, Puffery, Permissible Lie, Misleading Advertising*

Introduction

Advertising, as one of the tools of marketing communication, informs the people about the availability of different products and services. It helps them to be better informed with respect to the different features of product, its price, any modification in the product etc. and hence enables the people to take a rational purchase decision regarding their purchases. The totality of advertising and marketing communication messages and the symbolic meanings they employ play a significant role in framing and constructing consumer consciousness (Pollay, 1986). Therefore, in today's world advertising has a profound impact on the society of which consumer is a part. It is a powerful force that shapes the attitude and behaviour of the people. It also leaves an impact upon how people understand life, the world and themselves with respect to their values and behaviour.

Advertising is widely criticised not only for the role it plays in selling the products but also for the way it influences our society. Traditionally these criticisms have included allegations from a diverse group of critics that advertising is in a poor taste, advertising manipulates people to buy unneeded products, advertising is deceptive and that it provides too little substantive product information (Bauer and Greyser, 1968; Feldman, 1980; Greyser and Reese, 1971; Preston, 1975; Stern and Resnik, 1977). More recently critics of advertising have attacked it for stereotyping, for its influence on children and its handling of controversial products such as alcohol and tobacco (Wells and Burnet, 1998). Pollay (1986) states that advertising is reinforcing materialism, cynicism, irrationality, selfishness, anxiety, social competitiveness, sexual preoccupation and loss of self-respect. These critical analyses of advertising by different researchers are improving the understanding regarding the various negative and unethical aspects of advertising. One such unethical practice which needs to be highlighted is the phenomenon of misleading advertising.

A misleading advertisement is the one, which does not present true information of the product being advertised. It may contain one or more attributes which mislead the viewers such as wrong information, deceptive price, exaggeration, etc. This type of advertising mislead the consumer in a variety of ways, that may include using ambiguous phrases which

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can be misinterpreted by a reader; suggesting that a small difference in a product is important when it is not, artificial product demos in an advertisement, which is patently untrue; implying a product benefit is unique to a brand when it is available in others; incorrectly implying that an endorser uses and advocates the brand in case of testimonials or celebrity endorsement; and much more. Apart from some times indulging into too much of exaggeration, this also at times may lead to material injury to the consumer. This type of misleading advertisements are separately categorised as puffery and deception. Puffery is a statement made by advertisers or salespeople about the products that states no facts, but which may imply benefits of a product that are not true (Preston, 1975). Critics contend that puffery is misleading and should be regulated while defenders counter that reasonable people know puffery just as a way of showing enthusiasm for the product and consumers understand this aspect of selling (Wells and Burnet, 1998). For eg. Hallmark's slogan 'When you want to send the very best' is one such claim.

Deception exists when an advertisement is introduced into the perceptual process of some audience and the output of that perceptual process differs from reality of situation and affects buying behaviour to the detriment of the customer (Aaker, Myres and Batra, 2002). The Federal Trade Commission defines deceptive advertising as any advertisement in which there is a misrepresentation, omission, or other practice that can mislead a significant number of responsible consumers to their detriment. The perceptive of the 'reasonable consumer' is used to judge deception. The deception must lead to material injury. In other words, it must influence consumers' decision making about products and services (Preston, 1983). Claims made by fairness cream and soap advertisement, like Fair & Lovely come under this category.

Various researchers have taken up the issue of deception from time to time. Dillon (1973) and Brandt and Preston (1977) analyzed the various complaints made to FTC (Federal Trade Commission) on the part of consumers and suggested a need for consumer research to find out the problems of consumers with the deception instead of legal reliance of FTC. The legal notion of deceptive advertising was modified in the study of Attas (1999) where the researcher has investigated a moral account of legal notion of deception. Miniard (1999) explored further into this field of consumer research regarding deceptive advertising by focusing upon the information contained in the advertisements which may mislead the consumers by causing deceptive beliefs.

As far as the issue of puffery is concerned, researchers have tried to measure the effects of the puffery in advertisement on the consumers. Haller (1973) studied the students' views about exaggeration in advertising and revealed the fact that most of time the advertising which exaggerates becomes the point of disapproval for the audience. On the other hand, Cunningham and Cunningham (1977) studied the level of understanding and knowledge of commonly used advertising and puffery terms. The study clearly indicated that it was not only the least reasonable man (less educated) who was being deceived but even the reasonable man (educated) was also suffering deception caused by the use of different types of advertising or puffery terms. Perry and Berkey (2002) found that both familiarity and experience with product significantly influence the believability of the claims. Whereas, Cowley and Janus (2006) found that although consumers are able to identify the exaggerated claims as less believable than the original claims, their brand evaluations are inflated after the exposure to the exaggerated claims.

Apart from measuring the effects of misleading advertising different studies have tried to establish common principles, which may be incorporated in the definition of unfairness in advertising. Cohen (1974) opined the following criteria for deception: the claim is false or the claim is partially true and partially false; claim contains insufficient information; claim may be true or the proof is false i.e. it may create some false implications. Russ et al., (1979) significantly suggests that for deception to occur it must have three components: belief, falsity and relevance with the product being advertised. Russo et al., (1981) suggested that for advertisement to be misleading it should lead to the consumers' belief of a false claim or increased belief in a false claim after an exposure to the advertisement. Also it has recently been demonstrated that exposure to misleading advertising after consumption can change the consumers' memory in such a way that they may remember consuming a different and a better product (Cowley and Janus, 2006).

Regarding the measurement of consumer perception of the prevalence of misleading advertising, Schutz and Casey (2005) found that the majority of the consumers perceive all advertising for products and services on mail and telephone as misleading, then followed by television advertising. The newspaper advertising is considered to be the most credible. On the other hand, the issue of price misleading advertising and its effect on the trust worthiness towards the source of information and willingness to buy was taken up by Romani (2006). The researcher has provided evidence that the consumer react unfavorably to misleading content regarding price information.

As far as the studies regarding the issue of misleading advertisement in India are concerned, the dearth of research in this field has been felt. Some studies regarding the regulation of misleading advertising in India have been conducted (For details see Verma, 2001; Mehta, 2003; Arora, 2005). These studies dealt with the regulatory framework regarding the prevention of various types of unethical and illegal practices of advertisers.

Objectives of the Study

The perusal of the review of related literature leads one to realize that advertising has often been the centre of controversies for its various unethical practices. Critics associate it with health afflictions, unbridled materialism and manipulation. These debates alert perception and accommodation to important issues but fail to include those who ultimately serve as the most important arbiter of ethical practices i.e. the consumer. Hence, understanding consumer is important for both physical and theoretical reasons. In the era of cutthroat competition, the advertisers have to claim a lot about the product being advertised. As a result, they resort to certain practices such as exaggeration (or puffery), deception, etc. and hence leading to misleading advertising.

But, ultimately the consumer decides what is permissible and ethical in advertising, either directly (purchase behaviour) or indirectly (demands on regulatory agencies). Also, the phenomenon of advertising has a direct impact upon the consumer and hence society at large. Moreover, it is the concerned consumer who makes choices for or against the products advertised on the basis of these advertisements. And this behaviour is a resultant of consumers' perceptions towards the advertisements they are exposed to. Hence this makes it more important to address this deficiency of research in the field of misleading advertising.

Thus this research attempts to:

(i) Study the dominating attributes that constitute a misleading advertisement as perceived by the respondents

(ii) Analyse the perceptions of respondents towards various issues in misleading advertising.

Methodology

The revised questionnaire comprised of three sections. Section-I pertained to the different attributes that constitute misleading advertisement. These attributes were to be ranked in an ascending order according to their degree of dominance in defining misleading advertisement. Section-II consisted of 36 different statements covering the various dimensions of misleading advertising. The respondents were asked to rate each statement on five point Likert scale ranging from strongly agree to strongly disagree. Section-III pertained to the demographic profile of the respondent viz. age, income sex, etc.

A total of 460 respondents were personally contacted for the purpose of data collection. The sample comprised of different individuals from both the genders, different age categories, qualifications, income groups and professions.

The review of literature suggested that the respondents had to be individuals who could reasonably interpret the advertisement and, can form ethical viewpoint towards the products being advertised vis-à-vis advertisement shown (Cunningham and Cunningham, 1977). Hence, the respondents having minimum education level of senior secondary were taken for the study. Non-probabilistic judgement sampling technique is justified for exploratory studies (Churchill, 1979) and hence was used for data collection.

In order to determine the various factors revealing the ethical perceptions of the respondents towards the issue of misleading advertising, the scale reliability was tested and Factor Analysis was used. Apart from this, F and ANOVA statistics have also been used in order to study the variance of different responses with regard to the different demographic attributes of the respondents

Analysis and Discussion

The analysis and discussion has been divided into two sections. Section-I deals with the analysis of the responses of the respondents towards the dominance of different attributes present in the advertisements, which they feel, constitute misleading advertisements. Section-II is accredited to the application of factor analysis technique in order to analyse the different perceptual factors towards various aspects of misleading advertisements. These perceptual factors may affect the attitude of the respondents towards the issue of misleading advertising.

Section-I Dominance of Attributes in a Misleading Advertisement

In this section, the respondents were asked to rank the different attributes which they think constitute a misleading advertisement. The respondents gave specific ranks to the different attributes depending upon the dominance of these attributes being present in a misleading advertisement. Here, an attempt has been made to see from the respondents' perspective as to how he/she defines a misleading advertisement with regard to the dominance of different attributes that makes an advertisement so. In order to calculate the overall perceived rank, which connotes to the dominance of attributes over one another is shown in Table 1. The respective WASs were calculated on the basis of the ranks given by the respondents

Table 1: Dominance of Attributes in a Misleading Advertisement

Rank → Attributes ↓	1	2	3	4	5	6	Total	WAS	Overall Perceived Rank
a	195	105	71	39	29	21	460	4.728	1
b	32	58	105	131	78	56	460	3.276	4
c	34	51	65	113	151	46	460	3.057	5
d	95	141	105	60	39	20	460	4.289	2
e	13	10	22	29	99	267	460	1.745	6
f	91	95	92	68	64	50	460	3.850	3
Total	460	460	460	460	460	460			

a - Wrong information, b - Deceptive price tag, c - Exaggeration, d - False claims, e - Subjectivity, f- Befooling the consumers

Table 1 show the overall perceived ranks derived from the weighted average score (WAS) calculated for different attributes as per their ranking given by the respondents, which they perceive, to be dominantly present in a misleading advertisement. The highest weighted average score (WAS 4.728) was found to be in the case of attribute 'a' (wrong information), which shows that the respondents perceive that an advertisement is misleading if it contains the element of wrong information. The second most dominating attribute was found to be 'd' (false claims) having WAS 4.289 which clearly signifies that the issue of falsity in advertisements is one which respondents think makes it misleading. The respondents also feel that an advertisement is misleading even if it befools the consumers or carries deceptive price tag. It may be noted that the attribute 'e' (subjectivity), having WAS 1.745, has been considered to be the least dominating attribute which may make an advertisement misleading.

Hence, from the above analysis, it can be concluded that the issue of providing wrong information in an advertisement is the one, which supersedes all other issues viz. false claims, befooling the consumers, deceptive price tags, exaggeration and subjectivity in defining the misleading advertisement.

Most Dominating Attribute in a Misleading Advertisement

In this part of the analysis, the dominating attribute has been inferred by calculating the frequencies of the respondents for the 1st ranked attributes present in a misleading advertisement The analysis has been done on basis of gender and age categories of the respondents. F and ANOVA statistic have been applied to test the following null hypothesis:

H_{01}: There exists no significant variation between the responses of the respondents belonging to different genders and age categories towards the choice of most dominating attribute present in the misleading advertisements.

Most Dominating Attribute in a Misleading Advertisement: Gender-Wise Analysis

The gender-wise responses of the respondents regarding the dominating attribute present in a misleading advertisement have been presented in the Table 2.

Table 2: Most Dominating Attribute in a Misleading Advertisement: Gender-Wise

Gender → Attributes ↓	Males		Females		Total	
	N	Percent	N	Percent	N	Percent
a	108	40.4	87	45.1	195	42.4
b	25	9.4	7	3.6	32	7.0
c	17	6.4	17	8.8	34	7.4
d	54	20.2	41	21.2	95	20.7
e	8	3.0	5	2.6	13	2.8
f	55	20.6	36	18.7	91	19.8
Total	267	100	193	100	460	100

a Wrong information, b - Deceptive price tag, c - Exaggeration, d - False claims, e - Subjectivity, f- Befooling the consumers, N denotes number of respondents for the given category F-value = 1.426, d.f. = 5, 5 Insignificant at 0.05 level of significance

Table 2 reveals that in case of both gender categories of respondents, the presence of 'wrong information' and 'befooling' elements in an advertisement is what they feel constitute a misleading advertisement. While some of them, also consider the element of 'false claims' in an advertisement makes it misleading.

In case of male respondents, the attribute of 'wrong information' has been rated as the most dominant attribute (40.4%) followed by the attributes of 'befooling the consumers' (20.6%) and 'false claims' (20.2%). Whereas, in case of female respondents, the attribute of 'wrong information' has been rated as the most dominant attribute (45.1%) followed by the attributes of 'false claims' (21.2%) and 'befooling the consumers' (18.7%), which have been rated as the second and third most dominant attribute to constitute a misleading advertisement respectively.

F-test, applied on the Table 2 reveals that there exists an insignificant variation between the different gender categories towards the choice of most dominating attribute which defines the misleading advertisement.

Most Dominating Attribute in a Misleading Advertisement: Age-Wise Analysis

The age-wise responses of the respondents regarding the dominating attribute present in a misleading advertisement have been presented in the Table 3

Table 3: Most Dominating Attribute in a Misleading Advertisement: Age-Wise

Age → Attributes ↓	20-30 years		30-40 Years		40-50 years		50 years & above		Total	
	N	Percent	N	Percent	N	Percent	N	Percent	N	Percent
a	99	43.6	40	37.7	28	40.0	28	49.1	195	42.4
b	16	7.0	10	9.4	3	4.3	3	5.3	32	7.0
c	19	8.4	8	7.5	4	5.7	3	5.3	34	7.4
d	52	22.9	15	14.2	15	21.4	13	22.8	95	20.7

e	5	2.2	6	5.7	0	0.0	2	3.5	13	2.8
f	36	15.9	27	25.5	20	28.6	8	14.0	91	19.8
Total	227	100.0	106	100.0	70	100.0	57	100.0	460	100.0

a - Wrong information, b - Deceptive price tag, c- Exaggeration, d- False claims, e- Subjectivity, f- Befooling the consumers

N denotes number of respondents for the given category

F-value (between columns) = 2.549, d.f. = 3, 20 Insignificant at 0.05 level of significance

Table 3 reveals that almost in all the age groups the elements of wrong information, false claims and befooling the consumers are the major ones, which constitute a misleading advertisement. In the age categories of 20-30 years and 50 years & above, the dominating attributes constituting misleading advertisements are wrong information, false claims and befooling the consumers. On the other hand, the age groups of 30-40 years and 40-50 years believe that advertisement is misleading if it contains the attributes such as wrong information, befooling the consumers, and false claims dominantly. This shows that the young and the older respondents have common feeling towards the misleading aspect in an advertisement whereas in case of middle-aged respondents, the opinion differs marginally. ANOVA statistic however applied reveals that there exists an insignificant variation among the different age categories as regards their responses towards the choice of most dominating attribute which defines the misleading advertisement.

Section II - Perceptions towards Various Issues in Misleading Advertising

In this section, the respondents were given a set of 36 statements covering different aspects of misleading advertising. These statements were used to measure the attitude of the respondents towards misleading advertising. In this part of analysis, the respondents were asked to rate their opinion towards the different perceptual statements regarding various issues in misleading advertising on the given five point Likert scale ranging from strongly agree to strongly disagree and the weights were assigned from +2 to -2

In order to signify the relative importance of these statements, they have been rearranged on the basis of their WASs in descending order in the Table 4. This table depicts the overall WASs corresponding to each statement respectively.

Table 4: WAS of Statements Regarding Various Issues in Misleading Advertising

Label	Statement	Total
M 01	There is need for more truth in advertisement	1.491
M 11	There should be a ban on misleading advertisements.	1.307
M 07	Advertisements should be more realistic.	1.300
M 05	An advertisement should be held responsible for claims it makes.	1.296
M 12	Duty of advertisers is to be more factual as the purpose of advertisement is to inform the customer about the product.	1.250
M 26	Misleading the consumer by showing deceptive price (or sales promotion using false incentive schemes) of the product is also unethical.	1.109
M 30	The physical layout of an advertisement and its appearance sometimes misleads the consumer by hiding the weaknesses of the product.	1.048
M 28	The use of sex appeal sometimes deviate the attention of the viewer away from the false/ misleading aspect of the advertising.	1.046
M 27	Advertising tends to deceive the consumer through glamour.	1.013
M 04	There is too much of exaggeration in advertisements today.	0.970

M 02	Most of the advertisements now days are false and misleading.	0.950
M 32	The use of celebrities' image often misleads the consumers as they take image of the product concurrent to the image of celebrity promoting the product.	0.900
M 31	The consumers always take it for granted when the celebrities promote whereas they actually promote for what they are paid for and hence at times misleads the consumer.	0.891
M 13	A few advertisements appear to be real but create wrong impressions and false expectation in the mindset of the consumer.	0.843
M 14	The fake claims are so attractive in advertisements that they take us in the false world of illusion.	0.835
M 06	Too many of today's advertisements attempt to create a trivial or an imaginary difference.	0.826
M 25	Advertising is a very good source of entertainment.	0.798
M 08	Advertisements just tend to confuse people by presenting them with the bewildering choice of items and claims.	0.796
M 09	Advertisement creates false expectation in the mindset of consumers regarding products.	0.780
M 35	The use of emotional appeal in the advertisement makes it more subjective and misleading but viewers like such type of ads, as they are interesting.	0.733
M 34	The brand names of the product at times deceive the consumers by giving them wrong/ misleading clues regarding the product.	0.707
M 33	The slogans of the advertisement are often subjective in nature and hence mislead the consumer.	0.648
M 10	Advertisement often persuades people to buy things they don't need.	0.559
M 36	The humorous aspect in the advertisement is interesting but misleading.	0.448
M 19	The advertisements making tall claims are attractive and hence better remembered.	0.400
M 24	It is difficult to identify the misleading aspect in an advertisement.	0.396
M 21	Some advertisements are above the level of intelligence and hence it is difficult to understand them.	0.378
M 17	Due to cutthroat competition, an advertiser has to claim a lot.	0.274
M 22	Advertising is well organised, properly managed and an untruthful business.	0.239
M 18	It is difficult to check the exaggeration in advertisements so why tease the brain, just buy if you like it.	-0.120
M 03	In general advertisement presents true picture of products advertised.	-0.187
M 23	Since purpose of advertising is to inform the consumer, one must believe it	-0.333
M 16	So long it appeals to the consumer everything is fair.	-0.543
M 15	There is no harm in showing exaggeration in the advertisement so as it sells.	-0.635
M 20	All advertisements reveal true picture of the product advertised.	-0.813

Here an attempt has been made to study the perceptions of respondents on various issues in misleading advertising. Factor analysis was applied on the responses of the respondents towards the given set of statements relating to various issues in misleading advertising to come out with certain specific factors, which better explain their perceptions towards misleading advertising.

The factor analysis has been conducted in the following stages: Initially, the correlation among the variables was calculated. The inter-correlation matrix revealed that that the correlation between the variables was not high. A few argue that if there is a high correlation among the variables, the factor analysis will come with a lesser number of factors to represent a large number of variables. Others say that it will not give meaningful results if the variables are not correlated. But such a highly desirable situation may not exist in real life problems. It is inevitable to extract more number of factors to account for large variance (Srinivasan and Murthy, 1994).

Reliability of Scale

Cronbach alpha was calculated to determine the reliability of the scale used for factor analysis. The value of Cronbach alpha was 0.6995 which is very close to 0.70, the commonly accepted threshold (Nunnally and Berstein, 1994). Hence the reliability of the scale on the measures of internal consistency was confirmed.

Also, in order to test the suitability of the data for factor analysis the following steps were taken:

- Apart from correlation matrix, ant-image correlations were also computed. These showed that partial correlations were low, indicating that true factors existed in the data.
- Kaiser-Meyer-Olkin Measure of Sampling Adequacy (MSA) for individual variables was also studied. Overall MSA was found to be 0.762 which indicated that the sampling adequacy was satisfactory.
- Bartlett's Test of Sphericity showed statistically significant number of correlations among the variables.
- The communalities of the variables ranged from -0.430 to 0.761 whereas the factor loadings ranged from 0.406 to 0.836 as given in the table 6.8.

All the above standards revealed that the data was fit for factor analysis.

In the next stage Principal Component Varimax Rotated factor analysis was applied for deriving the number of factors. The Kaiser's criterion adopted here gives the rule of thumb to choose the number of factors having Eigen value greater than unity. Finally the principal factors were varimax rotated to obtain the different factors. The loadings of various statements in each factor and their Eigen values and Cumulated Variance have been shown in Table 5.

Table 5: Rotated Component Analysis (Varimax)

Variable	Factor											Comm
	1	2	3	4	5	6	7	8	9	10	11	
M 01	0.260	**0.582**	-0.065	-0.062	0 011	-0.194	-0.297	0.082	-0.011	0.084	-0.065	0.558
M 02	-0.029	0.082	0.064	0.144	0.074	0.067	-0.186	**0.724**	0.034	0.029	0.153	0.627
M 03	-0.008	-0.016	-0.006	-0.109	-0.089	0.115	**0.782**	-0.115	-0.037	0.002	-0.035	0.660
M 04	-0.128	0.109	0.213	0.160	0.066	0.200	0.034	**0.471**	-0.120	0.034	-0.020	0.383
M 05	-0.208	0 279	-0.013	0.235	**0.444**	-0.064	-0.215	-0.191	0.203	-0.085	-0.010	0.509
M 06	-0.091	**0.562**	0.043	0.286	-0.042	0.181	0 020	-0.111	-0.149	0.022	-0.008	0.477
M 07	-0.076	**0.673**	0.138	0.090	0.149	0.008	0 036	0.136	-0.016	-0.013	-0.027	0.529
M 08	0.146	0.258	0.251	**0.554**	-0.207	0.012	0.005	0.250	0.021	-0.043	0.116	0.579
M 09	-0.111	0.052	0.254	**0.561**	-0.051	0.062	-0.110	0.378	0.069	-0.033	-0.030	0.563
M 10	-0.221	0 011	0.049	**0.575**	0.105	0.051	0.034	0.054	0.159	0.038	0.265	0.497
M 11	-0 117	0.135	-0 052	**0.624**	0.244	-0.091	-0.158	-0.017	0.045	0.135	-0.134	0.556

M 12	-0.072	**0.516**	-0.035	0.074	0.153	-0.031	0.059	0.212	0.340	0.062	0.155	0.500
M 13	0.040	0.001	0.123	0.096	-0.049	0.191	-0.049	-0.002	**0.750**	0 054	0.109	0.646
M 14	-0.174	0.027	0.122	0.277	-0.016	0.340	-0.171	-0.072	**0.430**	-0.031	0.164	0.485
M 15	**0.654**	0.010	0.033	-0.145	-0.312	0.030	0.031	-0.067	-0.006	-0.053	-0.042	0.558
M 16	**0.711**	-0.137	0.039	-0.100	-0.062	-0.098	-0.003	-0.190	0.155	-0.054	0.083	0.619
M 17	0.265	0.082	0 243	0.118	0.020	**0.405**	-0.073	-0.421	-0.114	-0.198	0.182	0.582
M 18	**0.713**	-0.006	-0.129	-0.076	0.094	0.095	0.069	0.101	-0.061	-0.169	-0.085	0.603
M 19	0.065	0.033	0.010	0.046	0.012	**0.622**	0.227	-0.017	0.182	-0.169	-0 036	0.509
M 20	**0.418**	0.011	-0.072	-0.145	-0.115	-0 041	0.531	-0.126	-0.120	0.104	0.194	0.577
M 21	0.237	-0 272	-0.035	0.217	0.283	0.023	**0.409**	0.092	0.253	0.085	-0.162	0.532
M 22	0.049	-0.071	0.033	0.070	0.025	0.041	-0.007	0.027	0.141	0.062	**0.794**	0 671
M 23	**0.428**	-0.001	-0.124	0.231	-0.062	-0.060	0.260	-0.244	-0 263	0.107	0 189	0.502
M 24	0.233	**-0.364**	0.110	0.171	0.342	0.247	0.042	0.120	-0.052	0.078	0.037	0.432
M 25	0.030	-0.106	-0.032	0.024	-0.039	**0.571**	0.034	0.206	-0.015	0.350	0.092	0.516
M 26	-0.119	0.023	-0.006	-0.071	**0.720**	0.033	-0 079	0.129	-0.073	-0.018	0.029	0.569
M 27	-0.049	0 203	0.157	0.066	0.431	0.156	-0.060	0 119	-0.116	0.156	**0.458**	0.548
M 28	-0.021	-0.014	0.176	0.055	0.396	0.352	**0.430**	-0.087	0.090	0.190	0.141	0.572
M 29	-0.103	0.014	0.073	-0.129	0.230	**0.624**	-0.110	0.139	0.163	0.117	-0.018	0.547
M 30	-0.063	0.326	0.155	0.188	**0.429**	0.152	0 044	-0.072	0.139	0.156	0.050	0.430
M 31	-0.103	0.060	-0 013	0.009	0 005	0.025	0.008	-0.003	0.038	**0.836**	0.119	0.730
M 32	-0.155	0.066	0.358	0.162	0.236	0.101	0 031	0.130	0.053	**0.537**	-0.106	0.599
M 33	-0.080	-0.083	**0.601**	0.106	0.119	0.093	-0.111	0.181	-0.030	0.192	-0.080	0.574
M 34	-0 047	0.107	**0.690**	0.079	-0.092	0.046	-0.065	0.014	0.056	-0.084	0.164	0.548
M 35	0.075	-0.062	**0.443**	0.055	0.115	0.073	0.059	-0.158	0.343	0.152	-0.243	0 456
M 36	0 035	0.116	**0.502**	-0.031	0.126	-0.150	0.114	0.159	0.268	-0.086	0.339	0.538
E.Value	2.345	1.999	1.965	1.961	1.914	1.878	1.681	1.626	1.491	1.471	1.452	
% Var	6.516	5.553	5.458	5.448	5.317	5.256	4.669	4.516	4.143	4.087	4.032	
Cum. % Var.	6.516	12.069	17.527	22.975	28.292	33.548	38.177	42.693	46.836	50.923	54.955	

As it is evident from Table 5, eleven factors could be extracted. The large communalities indicate that a large amount of variance in a variable has been accounted for by the factor solution. The percentage of total variance is used as the index to determine how well the total factors accounts for variables represented together. The present solution accounts for the total of 54.9555% of total variance, which shows that the model with eleven factors is satisfactory.

Naming of Factors

All the eleven factors extracted have been given names on the basis of various variables included in each case. The names of the factors, the statements representing each factor and their respective loadings have been presented in Table 6.

`Table 6: Naming of the Factors Pertaining to the Perceptions towards Various Issues in Misleading Advertising

Factor No.	Name of the Factor	Label	Statements	Factor Loading
1	Acceptance for Exaggeration	M 15	There is no harm in showing exaggeration in the advertisement so as it sells.	0 654
		M 16	So long it appeals to the consumer everything is fair.	0.711
		M 18	It is difficult to check the exaggeration in advertisements so why tease the brain, just buy if you like it.	0.713
		M 20	All advertisements reveal true picture of the product advertised.	0.418
		M 23	Since purpose of advertising is to inform the consumer, one must believe it	0.428
2	Absence of realism	M 01	There is need for more truth in advertisement	0.582
		M 06	Too many of today's advertisements attempt to create a trivial or an imaginary difference.	0.562
		M 07	Advertisements should be more realistic.	0.673
		M 12	Duty of advertisers is to be more factual as the purpose of advertisement is to inform the customer about the product.	0.516
		M 24	It is difficult to identify the misleading aspect in an advertisement.	-0.364
3	Subjectivity	M 33	The slogans of the advertisement are often subjective in nature and hence mislead the consumer.	0.661
		M 34	The brand names of the product at times deceive the consumers by giving them wrong/misleading clues regarding the product.	0.690
		M 35	The use of emotional appeal in the advertisement makes it more subjective and misleading but viewers like such type of ads, as they are interesting.	0.443
		M 36	The humorous aspect in the advertisement is interesting but misleading.	0.502

4	Persuasion through falsity	M 08	Advertisements just tend to confuse people by presenting them with the bewildering choice of items and claims.	0.554
		M 09	Advertisement creates false expectation in the mindset of consumers regarding products.	0.561
		M 10	Advertisement often persuades people to buy things they don't need.	0.575
		M 11	There should be a ban on misleading advertisements.	0.624
5	Deception	M 05	An advertisement should be held responsible for claims it makes.	0.444
		M 26	Misleading the consumer by showing deceptive price (or sales promotion using false incentive schemes) of the product is also unethical.	0.720
		M 30	The physical layout of an advertisement and its appearance sometimes misleads the consumer by hiding the weaknesses of the product.	0.429
6	Claiming Repetitively	M 17	Due to cutthroat competition, an advertiser has to claim a lot.	0.406
		M 19	The advertisements making tall claims are attractive and hence better remembered.	0.622
		M 25	Advertising is a very good source of entertainment.	0.571
		M 29	The increased frequency of an advertisement shown on the media helps in creating a positive view towards the product even if its quality may not be good.	0.624
7	Truthful Image Projection	M 03	In general advertisement presents true picture of products advertised.	0.782
		M 21	Some advertisements are above the level of intelligence and hence it is difficult to understand them.	0.409
		M 28	The use of sex appeal sometimes deviate the attention of the viewer away from the false/ misleading aspect of the advertising.	0.430
8	False claims and Exaggeration	M 02	Most of the advertisements now days are false and misleading.	0.724
		M 04	There is too much of exaggeration in advertisements today.	0.471
9	Creating Wrong Impressions	M 13	A few advertisements appear to be real but create wrong impressions and false expectation in the mindset of the consumer.	0.750
		M 14	The fake claims are so attractive in advertisements that they take us in the false world of illusion.	0.430

10	Celebrity effect	M 31	The consumers always take it for granted what the celebrities promote whereas they actually promote for what they are paid for and hence at times misleads the consumer.	0.836
		M 32	The use of celebrities' image often misleads the consumers as they take image of the product concurrent to the image of celebrity promoting the product.	0.537
11	Untruthful business	M 22	Advertising is well organised, properly managed and an untruthful business.	0.794
		M 27	Advertising tends to deceive the consumer through glamour.	0.458

The eleven factors shown in the table have been discussed below:

Factor 1: Acceptance for Exaggeration: Table 6 reveals that the element of exaggeration as the most important factor explaining 6.516% of the variance. Five statements were loaded on this factor. Most of the statements relate to the element of exaggeration shown in the advertisements being perceived positively. The statements loaded on this factor show that most of the respondents feel, that it is not easy for them to check the element of exaggeration in the advertisements. So they should just not think about it. The respondents also feel that what appeals to the consumer is always fair and hence there is no harm in showing exaggeration if it helps in selling the product. Some of the respondents are also of the view that the advertising is meant to inform the consumer so one should believe it. This implies that much of the variance stated can be assigned to the positive attitude of the respondents towards the advertising. Since, they feel that the main purpose of advertising is to sell the product and inform about the product so, if they exaggerate for the same, then they are not wrong. Hence, it can be inferred that most of the respondents view advertising as a professional tool and treat exaggeration, if done for the purpose of selling, as a permissible lie.

Factor 2: Absence of Realism: It is revealed from the table 6 that the absence of realism is the second most important factor explaining 5.553% of the variance. Five statements loaded on this factor revealed that most of the respondents feel that there is a need for incorporating realism in the advertisements. They also feel that the advertisers are just creating very trivial differences in the products that do not exist in reality. Some of the respondents also opine that the duty of an advertiser is to make an advertisement more informative regarding the product. A few of the respondents are not ready to accept that identifying a misleading aspect in advertisements is difficult for them. The implication of this factor is that most of the respondents feel that advertisements should be made more factual and informative with regard to the products. This provides a clue for the advertisers to indulge into more truthful business.

Factor 3: Subjectivity: The issue of subjectivity is another most important factor, which is explained by 5.458% of the variance. Four statements loaded on this factor signify that the element of subjectivity in the advertisements misleads the viewers. Most of the respondents feel that the subjective slogans or brand names in the advertisements provide misleading clues that ultimately deceive the consumers. The respondents also feel that the presence of emotional and humorous appeals in advertisement, although interesting, but misleads. The implication of this factor is for the advertisers to check the subjectivity in the advertisements, which may be due to its brand name, appeal or slogans so that the viewers are not misled.

Factor 4: Persuasion Through Falsity: The issue of persuasion through falsity is another important factor that is explained by 5.448% of the variance. Four statements were loaded on this factor. The statements loaded on this factor show that the respondents understand that advertising is misleading and there should be legal prohibition against misleading advertisements. They also feel that advertising just persuades them to buy the things they don't need, and also use the element of falsity to do so. Some of the respondents are even of the view that the advertising is presenting a bewildering choice of items and false claims, which ultimately confuses the consumers. The implication is, however, for the advertisers that they should not indulge into false means in the advent of promoting their products because this leads to the confusion in the mindset of the respondents and makes them against the advertisements.

Factor 5: Deception: The deception in the advertisements is another important factor explaining 5.317% of the variance. Three statements were loaded on this factor. These statements show the negative attitude of the respondents towards deceptive element. They feel that the advertisements mislead the consumers by showing deceptive price or sales promotion, which is unethical. Some of the respondents are also of the view that the physical layout of advertisements is so attractive that it tends to hide the weaknesses of the product advertised. Besides this, the respondents want advertisers to be held responsible for the claims they make for their products being advertised. The implication is that much of the variance can be assigned to the negative attitude of the respondents towards the deceptive approach used by the advertisers which misleads them. This provides a signal to the advertisers to curb their deceptive practices and hence resort to ethical practices.

Factor 6: Claiming Repetitively: The repetition of claims in the advertisements is another important factor explaining 5.215% of the variance. Four statements were loaded on this factor. The statements loaded on this factor show that the increased frequency of an advertisement shown on the media is one factor which creates an image of the product being good whereas in reality it may not be so. Some of the respondents feel that the advertisements that use exaggerated claims are better remembered. Besides this, the respondents also feel that the advertising is a good source of entertainment and they are claiming a lot due to the cutthroat competition. The implication, here, is that much of the variance can be assigned to the fact that the repetition of the advertisements and the claims actually are not perceived positively by the respondents. This provides a caution for the advertisers that the consumers understand the fact that the increased frequency of advertisement leads to better image of the quality of product which is not so in reality.

Factor 7: Truthful Image Projection: The truthful image projection in the advertisements as another important factor explaining 4.669% of the variance. Three statements were loaded on this factor. The statements loaded on this factor show that the respondents feel that the advertisements, generally, are presenting a true picture of the advertised product. The respondents are also of the view that the use of sex appeal deviates the attention away from the misleading aspect of the advertisement. Besides this, some respondents even find the advertisements beyond their intelligence and hence difficult to understand. This implies that most of the respondents feel that advertising is presenting a true picture of the product advertised may be due to the lack of identification of the misleading element which gets unnoticed at times.

Factor 8: False Claims and Exaggeration: The issue of false claims and exaggeration in the advertisements is another important factor explaining 4.516% of the variance. Two statements loaded on this factor show that most of the respondents feel that these days advertising is false, misleading and exaggerated. This implies that much of the variance can be attributed to the negative attitude of the respondents towards unethical practices such as falsity and exaggeration in advertisements.

Factor 9: Creating Wrong Impressions: The aspect of creating wrong impressions on the consumers' mind is another important factor, which is explained by 4.143% of the variance. Two statements loaded on this factor show that advertising is promoting wrong impressions and false expectations in the mindset of the consumers, which ultimately takes the consumers in the false world of illusion. The implication, here, is that much of the variance can be accredited to the negative attitude of the respondents towards advertisements which create wrong impressions or illusions.

Factor 10: Celebrity Effect: It is revealed that the aspect of celebrity effect in the advertisements as another factor which is explained by 4.087% of the variance. Two statements were loaded on to this factor. These statements show that the celebrities promote the product for which they are paid for. But this, in turn, misleads the consumers as they take it for granted what their favourite celebrities are saying. The respondents also feel that, at times, they are misled by correlating the image of celebrity with that of the product promoted through them. This implies that the variance can be assigned to the fact that the respondents understand that they are misled through celebrities. Although, they accept that what the celebrity promotes, they take it for granted. This explains the role of celebrities in endorsing the products at times through unethical means.

Factor 11: Untruthful Business: The factor of untruthful and glamorous business of advertising as a factor is explained by 4.032% of the variance. Two statements loaded on this factor show that the advertising is well-managed, untruthful business which tends to deceive the consumers through glamour. The implication to this can be attributed to the fact that the respondents have negative attitude towards the untruthful and deceiving practices of advertising.

Conclusion

Generally advertising related decisions are left to the discretion of the advertiser. Decisions may be based on a variety of considerations, including the objective of the advertising campaign, the attitude of the target audience, the philosophies of the agency and the advertiser, and legal precedent. Some of the decisions are based on ethical concerns (Wells and Burnet, 1998). Much of what is judged as ethical or unethical comes down to the personal judgement (Oguinn, 2000).

From the above analysis and discussions it is concluded that there is insignificant variation between the responses of both the gender categories and also among the different age groups of respondents, as far as the choice of the most dominating attribute, which defines a misleading advertisement, is concerned. The term 'misleading advertisement', as perceived by the respondents, can be defined as the one which contains wrong information regarding the product, make false claims and attempts to befool the consumers through exaggeration, deception and subjectivity.

The factor analysis technique revealed very specific factors, which clearly define the perceptions of the respondents towards the various issues relating to misleading advertisements. The perceptions that govern the attitude of the respondents towards the misleading advertising were much on the negative side as revealed by the factors extracted. Most of the respondents felt that there is absence of reality in these types of advertisements. These advertisements were also having the elements of subjectivity, which make them deceptive and hence misleading. The respondents were also aware of the fact that the advertisements were making false claims, creating wrong impressions and were taking the viewers in the false world of illusion. They understood that the usage of celebrity endorsement and sex appeal in the advertisement is to deviate their attention away from the misleading aspect of the advertising and hide the weaknesses of the product being advertised. The advertisements tend to advertise the products repetitively to create its positive image by means of exaggeration and deceptive pricing practices. The only positive perception, which could be found, was that some of the respondents showed their acceptance for exaggeration in advertisements. They felt that exaggeration is a pre-requisite for promoting the product and hence consider it to be a permissible lie.

In a nutshell, it can be said that the respondents are well aware of the unethical practices of misleading advertisements and perceive these as an untruthful business. The study provides an implication to the advertisers, who are in the business of making profits. And, in the advent of this they should not forget that their advertisements are acting as a potent tool in shaping the lifestyle of the society at large. Also, as most of these advertisements are perceived negatively by the viewers, hence a word of caution is left for the discretion of the advertisers to re-evaluate their communication strategies to come out with a new equation of advertising maintaining the balance of professionalism and ethics.

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Mediator Role of Customer Satisfaction in Between After-Sales Service Quality and Behavioural Intention: The Case of Electronic Appliances

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The intent of this paper is to investigate the effect of after-sales service quality on customer's satisfaction as well as their behavioural intentions The research was conducted among the consumers of electronic appliances in Madurai city, Tamilnadu In total, 319 usage responses were utilized The study confirms that the after-sales service quality influences the customer satisfaction, which in turn influence the behavioural intentions The mediatory role of customer satisfaction is inevitable in between after-sales service quality and behavioural intention in electronic goods market. Hence, the study is intended to lay stress on the strategic role of after-sales service on the value-adding process of the total offering The findings of the study reveals that the delivery and installation service quality are the improved antecedents of overall satisfaction Both of these two service quality attributes have a significant and positive influence on the repurchase intention and positive word-of-mouth impact among the customers. The mediator role of overall satisfaction between the two service quality and the outcomes are higher than the direct impact of antecedents of overall satisfaction on the outcome of overall satisfaction in the case of Electronic appliances

Keywords: *Customer Satisfaction, After-Sales Service Quality, Behavioural Intention, Electronic Appliances*

Introduction

The buyer-seller relationship and their mutual benefits like satisfaction and performance through service quality dimensions has been widely recognized (Zeithaml, 2000). The service quality has been rightly treated as one reliable for gaining sustainable competitive advantage, which means that service quality aspects posses a substantial strategic role for companies. This does not happen only in the pure service sectors, but also in many others where service is a considerable part of the augmented product. The concept of service quality can be used in the all sectors, since practically everywhere the total product offering is a mixture comprised by a tangible and an intangible part. Supportive or augmenting services like after sales service contribute to the total offering substantially, building an 'augmented product', (Shostack, 1977). The after-sales service transforms the product into a 'product-service mixture' offering (Rosen and Surprenant, 1998). The relative importance of supplementary services to the core service or product is consistently increasing. In the case of retail industries, the companies are investing heavily in offering additional services (after-sales services) in order to maintain their differentiation and distinctiveness (Loomba, 1998).

Even though, there are so many attempts to bring out the relationship between service quality on customers satisfaction and their behaivoural intention Sirgy, 1982; Belk, 1988; Firat et al., 1995; Dabholkar et al., 2000; Yuksel et al., 2008, still it is unclear. Oliver (1997) augued that satisfaction is similar to the consumers' overall attitude to a service firm. Parasuraman et al., (1988) argued that service quality is universal, more enduring than satisfaction, and is therefore a better reflection of the consumers' overall attitude to the service firm. Giese and Cote (2000) pointed out that true satisfaction will remain an elusive concept.

The important antecedent of the customer satisfaction of a firm is the service quality (Fournier and Mick, 1999) whereas the important outcome of the service quality is behavioural intention of the consumers. The relative importance of the supplementary services to the care services offered by the service providers is constantly increasing (Goffin and New, 2001). It also has its own impact on the customers post purchase behaviour (Rosen and Surprenant, 1998).

In this paper, it is argued that the after-sales service quality is exceptionally significant in electronic industry and this after-sales service quality leads to the overall "product-mixture", provided by the retail companies. The study is concerned with the view that

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after-sales services play a crucial role in relationship building and as such they should be examined and evaluated attentively

The present paper is structured as follows. Initially, the related literature reviews introduces the main terms and constructs under investigation in the retail context. Then, the objectives of the study and proposed methodology are explained. The discussion of the results and the conclusions are followed by the research limitations and scope for further research. Much efforts have been taken to focus on the managerial implication since it is highly useful to the managers in electronic industry to make relevant decision regarding how to add value to their core product in the industry.

Review of Literature

The term 'after-sales services' has been used to describe services that are provided to the customer after the products have been delivered (Vitasek, 2005). The term "After-sales support", technical support (Griffin and New, 2001), and product-support services, have been used to show the after-sales service quality. The term after-sales services have been approached in two important dimensions. When referring to service providing companies, after-sales services are being treated as one among several supplementary service elements provided by them (Oliva and Kallenberg, 2003). On the other hand, it indicates the transport/delivery services to clients, the installation, the product-related training, the hot-line and advice by the help desk, any repairing service and even the recycling process (Gaiardelli et al., 2007).

The term 'quality' derives its interpretation from the Disconfirmation Theory (Shostack, 1977). Groonroos (1984) classified the technical and functional service quality. Mc Dougall and Levesque (1994) and Rust and Oliver (1994) identified that service quality is related with personnel-related, the tangible offering related and the service-scape related. The service quality dimensions are measured by the difference between the perceived and expected performance of service quality, called as 'SERVQUAL' scale (Parasuraman et al., 1991; Babakus and Boller, 1992; Webster, 1989). Cronin and Taylor (1992) profounded the 'SERVPERF' scale to measure the service quality. In this scale, the performance-only measurement is used. It has been also applied by Teas (1993).

When applying the quality theory to after-sales services, the present study believes that after-sales services are contributing to the "technical quality" of the overall service and the "functional quality" of the service. Rust and Oliver (1994) identified that after-sale services are closely related to both the "service product" and the 'service delivery' dimensions of quality.

The positive perceptions and attitudes of the target customers towards the quality-elements offered by the firm, leads to both attraction of new customers and retain the existing customers through the positive words-of -mouth (Boulding et al., 1993). Zeithaml et al., (1996) found that the overall service quality perception influence words-of-mouth (WOM) communication, recommendations and loyalty. The behavioral intention and attitudes are influenced by the perception on service quality dimensions (Anderson and Sullivan, 1993).

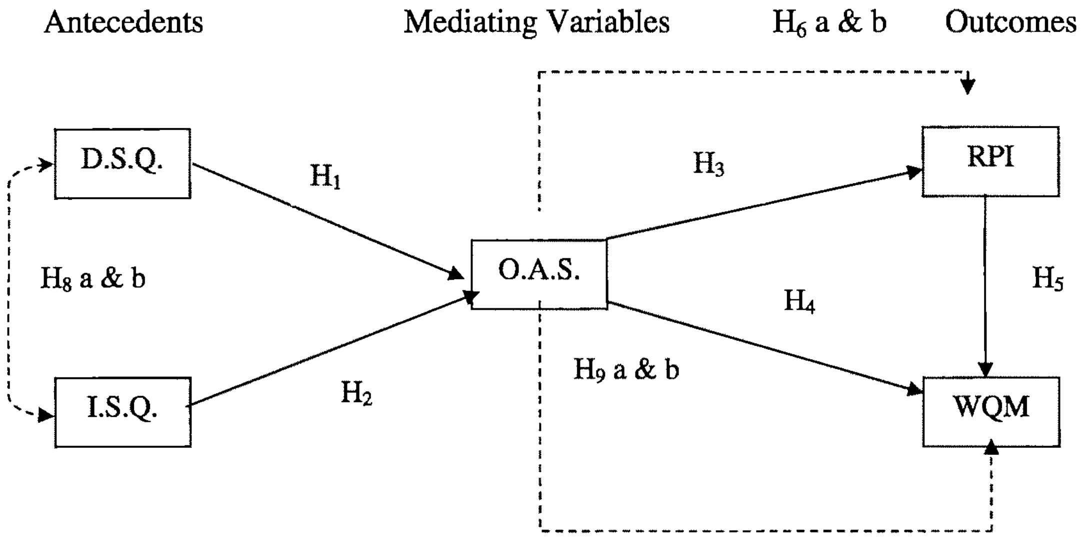
The present study focuses on two aspects of behavioural intentions and since a lot has been said about the re-purchase intention, it is necessary to analyse further the recommendation aspect. Recommendations represents one form of WOM communication, and refer to the positive inter-personal communication regarding a product/service (Wheiler, 1987). This kind of communication, although informal and spontaneous, it is very effective and strongly desirable as a marketing output (Bolton et al., 2004). There is a positive correlation between referrals and loyalty and commitment.

Overall satisfaction is viewed as a function multiple transient satisfactions with services when perceived performance is compared to one or multiple subjective comparison standards (Danaher and Mattson, 1994). Overall satisfaction is a post choice evaluative judgment of a specific purchase occasion (Bitner and Hubbert, 1994). Oliver (1997) stated that the overall satisfaction is the consumers' fulfillment response. It is a judgment that a product or service feature, or the product or service itself provided a pleasurable level of consumption–related fulfillment. Fournier and Micks (1999) revealed that beyond the cognitive nature of satisfaction, which emphasis different comparison standards and feed back from initial product performance, the emotional nature of satisfaction captures the defining tone of consumer satisfaction which may be specific to cultures, values and metaphors. In the present study, the overall customer satisfaction is viewed as a consumer's overall emotional response to the entire service experience for a single transaction at the post purchasing period.

The previous studies focused only the antecedents or consequences of service quality and only few studies related both. Even on those few studies, the role of mediator variable in between the service quality and its consequences is very rare. The present study has made an attempt to fill up these research gap with the help of Structural Equation Modeling.

Research Model

The research model was developed by integrating previous research works on antecedents and consequences of service quality (Boulding et al., 1993; Brady and Cronin, 2001; Gaiardelli et al., 2007). Fig-1 displays the relationship between the focal constructs in our main Model.



Direct

H_1 : DSQ → O.A.S.

H_2 : ISQ → O.A.S.

H_3 : OAS → RPI

H_4 : OAS → WOM

H_5 : RPI → WOM

Indirect

Mediation Test Stage-1 (Antecedents to outcome variables)

H_6 a) DSQ → O.A.S. → RPI
b) ISQ → O.A.S. → RPI

H_7 a) DSQ → O.A.S. → WOM
b) ISQ → O.A.S. → WOM

Stage-2 (Antecedents to mediator variables)

H_8 a) DSQ → ISQ → O.A.S.
b) ISQ → DSQ → O.A.S.

Stage-3 (Medi variable to outcome variables)

H_9 a) OAS → RPI → WOM
b) OAS → WOM → RPI

Figure 1: Research Model

In all cases the study posits that the antecedent variables (After-sales service-quality) will have a positive impact on consumer satisfaction. In addition, and based on the research of Wirtz and Mattilla (2001) and, the study specified paths from both dimensions of service quality to overall customers satisfaction. On the basis of the study by, the present study posits a direct path from after-sales service quality to the consumer's overall satisfaction. Moreover, that overall satisfaction will have a positive impact on repurchase intention and words-of-mouth. Finally, consistent with the research of Caruna (2002), the present study proposes that consumers overall satisfaction mediates the impact of two antecedents on repurchase intention and words of mouth.

Hypotheses Development

H_1. Effects of Delivery Service Quality (DSQ) on overall satisfaction (O.A.S)

H_2. Effects of Installation Service Quality (ISQ) on overall satisfaction (O.A.S)

H_3. Effects of Overall Satisfaction (OAS) on Repurchase Intention (RPI)

H_4. Effects of Overall Satisfaction (OAS) on Word-of-mouth (WOM)

H_5. Effects of repurchase intention on Word-of-mouth (WOM)

$H6_a$. Effects of DSQ on RPI through OAS

H_{6b}. Effects of ISQ on RPI through OAS

H_{7a}. Effects of DSQ on WOW through OAS

H_{7b}. Effects of ISQ on WOW through OAS

H_{8a}. Effects of DSQ on OAS through ISQ

H_{8b}. Effects of DSQ on OAS through DSQ

H_{9-a} Effects of OAS on WOW through RPI

H_{9-b}. Effects of OAS on RPI through WOW

Method

The research was organized in two stages. The first stage involved a pilot study to validate the scale initially while the second employed a large-scale survey to obtain the data for model testing.

Pilot Study

The content of the initial questionnaire was pre-tested among 50 consumers in electronic industry, 20 each retailers and service managers and 10 academicians at the universities level. Evaluating the reliabilities of the constructs was assessed by Cronbach's alpha. As recommended by, the reliability co-efficients were scrutinized to ensure that they met the desired criteria of greater than 0.70 as reliable indicators of the construct. In order to test the validity of measures used in the study, confirmatory factor analysis using AMOS 6.01 was conducted (Byrne, 2001). The content, convergent and discriminant validity of the constructs had been tested as per the instruction given by Brunner and Sub (2005), Gefen et al., (2000).

Based on the feed back of the respondents selected for the pilot study, the questionnaire was further revised and finalized.

Measures

The final questionnaire consisted of set of measures:

i) Perceptions on delivery service quality;

ii) Perceptions on Installation service quality,

iii) Overall satisfaction;

iv) Repurchase intention;

v) Word-of-mouth and

vi) General information including demographic variables.

Large-Scale Survey: Data Collection and Sampling

The main study was conducted in Madurai city at Tamilnadu. In total 83 dealers in electronic goods market at the study area had been identified. The homogeneous group of consumers who had purchased an appliance requiring delivery and installation in the last six months had been collected from the dealers as the data base. The sample was selected randomly from the company's consumer database (Kerlinger and Lee, 2000). Overall, a total of 319 usable responses were included in the research conducted. The conceptual construct as reflected in the questionnaire variables was based on a through analysis of the entire range of related service-delivery dimensions, on an item by item basis. The appropriate statistical tools were used to analyze the data to prove or disprove the hypotheses formulated for the present study.

Analysis Results

The descriptive statistics that generated from SPSS analysis are shown in Table 1.1.

Table 1.1: Mean and Coefficient of Variation on the Variables in each Construct

S. No.	Variables in each Construct	Mean	Coefficient of Variation (in percent)
I.	**Delivery Service Quality (DSQ)**		
1	Quality of product itself when delivered	3.34	11.83
2	Reliability in delivery times	3.92	10.05
3	Kindness and friendliness of the delivery personnel	3.93	14.48
4	Perception of the proper invoice/delivery papers	3.94	15.17
5	Transfer of product to your place	3.45	12.62
6	Appearance of delivery personnel	3.58	13.08
7	Quality of product packaging when delivered	3.61	14.11
II	**Installation service Quality (ISQ)**		
1	Flawless of the installation	3.65	12.69
2	Time elapsed between delivery and installation	3.61	13.08
3	Accurate information about time of installation	3.72	11.61
4	Kindness and friendliness of the installation personnel	3.69	14.14
5	Advice and instructions given by the technicians	3.76	11.38
6	Attentiveness of installation personnel in order to avoid damages	3.58	12.09
III	**Overall satisfaction (OAS)**		
1	Towards the product	3.38	10.11
2	Towards the service	3.45	8.96
3	Towards the company	3.62	12.73
4	Towards the staffs	3.29	14.59
IV	**Repurchase Intention (RPI)**		
1	Intention to prefer the same retailer in the next purchase	3.21	11.44
V	**Word-of-mouth**		
1	Intention to recommend the retailer to others	3.36	14.08

The result shows that the respondents are quite satisfied by both Delivery Service Quality (DSQ) and Installation Service Quality (ISQ) since their respective mean scores are 3.68 and 3.66. The highly perceived variables in DSQ is reception of the proper invoice/delivery papers whereas in ISQ, it is 'advice and instructions given by technicians since their respective mean scores are 3.94 and 3.76. The overall satisfaction among the respondents is also quite good since its mean score is 3.44. It is notable that the mean score of Repurchase Intention (RPI) and Words-Of-Mouth (WOM) is 3.21 and 3.36 respectively. The mean score of RPI and WOM is relatively low compared to mean score of the two latent variables. It may be due to the impact of other antecedent variables except the DSQ and ISQ.

Reliability and validity of the variables in each construct

The reliability and validity of the variables in each construct have been examined with the help of partial least squares Graphs version 3. The standardized factor loading of the variables in each construct, its 't' statistics, composite reliability and Average Variance Extracted (AVE) by each construct have been computed. The results are given in Table 1 2.

Table 1.2: Assessment of Validity and Reliability

S. No.	Construct and Variables	Standardized Factor Loading	T-statistics	Composite Reliability	Average Variance Extracted
1	**Delivery Service Quality**				
	Quality of product itself when delivered	0.9186	15.2446*	0.9542	0.82
	Reliability in delivery times	0.8453	12.0881*		
	Kindness and friendliness of the delivery personnel	0.9217	17.0923*		
	Reception of the proper in voice/delivery papers	0.8089	11.0849*		
	Transfer of product to your place	0.7332	7.1336*		
	Appearance of delivery personnel	0.7916	10.9103*		
	Quality product packaging when delivered	0.9184	15.8124*		
II	**Installation Service Quality (ISQ)**				
	Flawless of the installation	0.7517		0.9609	0.89
	Time elapsed between delivery and installation	0.8604	13.3611*		
	Accurate information about time of installation	0.9303	18.0184*		
	Kindness and friendliness of the installation personnel	0.8519	13.0196*		
	Advice and instructions given by the techniques	0.7802	9.9711*		
	Attentiveness of installation personnel in order to	0.7654	8.2024*		
III.	**Overall Satisfaction (OAS)**				
	Towards the product	0.9226	17.1089*	0.9064	0.67
	Towards the service	0.8197	11.0994*		
	Towards the company	0.7917	10.9433*		
	Towards the staffs	0.8226	12.1417*		

*Significant at five per cent level.

Note: Repurchase Intention and words-of-mouth are the single item, hence they are not included.

In the case of delivery service quality, the standardized factor loading of the variables are varying from 0.7332 to 0.9217 whereas the 't' statistics of all standardized factor loadings are significant at five per cent level. It shows the convergent validity of the construct. The composite reliability of the DSQ is 0.9542 which is greater than the standardized minimum of 0.50 whereas the AVE of DSQ is greater than the standardized minimum of 50.00 per cent. The source trend is identified in installation service quality and overall satisfaction.

It was particularly important that the present study establish discriminant validity between five key pairs of constructs: two service quality factors, overall satisfaction, repurchase intention and word-of-mouth. In total 10 pairs of construct were tested by using Fornell and Larcker's (1981) criterion. The results are given in Table 1.3.

Table 1.3: Inter-Correlation between the Constructs

S. No.	Construct	Correlation Coefficients				
		1	2	3	4	5
1	DSQ		0.6585*	0.8085*	0.4043*	0.3148*
2	ISQ			0.7142*	0.5024*	0.4024*
3	Overall satisfaction (OAS)				0.4449*	0.3846*
4	Repurchase Intention (RPI)					0.6123*
5	Words-of-mouth (WOM)					

Significant at five per cent level.

The inter correlation between the constructs are positive and significant at five per cent level. The correlation co-efficient is ranging from 0.8085 to 0.3148. The discriminant validity was confirmed with the help of the AVE of the construct and the square of correlation co-efficient between the construct with any other construct. It AVE is greater than the square of correlation of that construct with any other construct, the discriminant validity is assumed (Forenell and Larcker, 1981). For example the AVE of DSQ in the present study is 0.82 whereas the square of correlation co-efficient between DSQ and ISQ, DSQ and OAS, DSQ and RPI and DSQ and WOW are 0.4336, 0.6537, 0.1635 and 0.0991 respectively. Similarly, the AVE of other constructs is greater than the square of correlation co-efficient between the construct with other constructs. It indicates that each construct is more highly correlated with its measure, than with any of the other model constructs.

Direct and Indirect Effect of the Constructs on Dependent Variable

The direct effects of antecedents of service quality on various outcomes have been examined initially. The role of mediatory variable in between the antecedents and outcome have also been analyzed with the help of SEM. The results are given in Table 1.4.

Table 1.4: Path Coefficients of the Constructs

Hypothesis	Relationship	Research Model		Mediation tests	
		Beta	t-statistics	Beta	t-statistics
H_1	D.S.Q → O.A.S	0.3145	4.8542*		
H_2	I.S.Q → O.A.S	0.2024	2.7903*		
H_3	O.A.S → RPI	0.4039	6.6511*		
H_4	O.A.S → WOM	0.4114	6.7033*		
H_5	RPI → WOM	0.5142	7.3085*		
	Mediation test stage-II antecedents to outcome variables				
H_{6a}	a) DSQ → O.A.S. → RPI			0.1029	1.9143*
H_{6b}	ISQ → O.A.S → RPI			0.2445	2.7039*
H_{7a}	D.S>Q → O.A.S → WOM			0.1171	2.0424*
H_{7b}	ISQ → O.A.S → WOM			0.2664	3.1454*
	Mediation test stage2: antecedents to mediator variable			0.2143	2.5844
H_{8a}	DSQ → ISQ → OAS			0.2143	2.5844*
	ISQ → DSQ → OAS			0.2339	2.6843*
	Mediation test stage mediator variable to out come variables			0.2143	2.5844*
H_{8b}	OAS → RRI → WOM			0.2417	2.6142*
	OSA → WOM → RPI			0.1465	1.4899*

Research Model: (WOW; R_2=0.6145); (OAS; R_2=0.7345; (RPI=R_2=0.6249).

Direct effects (Tests of Hypotheses H_1, to H_5)

The beta coefficients and the respective 't' values for the first five hypotheses are given in Table 1.4. As depicted, H_1 was the significant hypothesis. It posited that the Delivery Service Quality have a significant positive impact on overall customer satisfaction (ß =0.3145; P<0.05). The study found support for H_2 and H_3 (ß=0.2024; P<0.05; ß=0.4039; P<0.05). The H_4 and H_5 were supported by the empirical study (ß=0.4114; P<0.05 and ß=0.5142 P<0.05). Moreover, examination of the beta values suggests that the important antecedents of overall customer satisfaction is Delivery Service Quality since its ß value is greater than the beta value of Installation Service Quality. In total, the repurchase intention has a higher significant impact on the words-of-mouth among the respondents since its 'ß' value is higher than among other Beta values in the first five hypotheses. Hence, the analysis reveals that the important antecedent of overall satisfaction is Delivery and Installation Service Quality whereas the most important antecedent of words-of-mouth is repurchases intention. The important antecedent of repurchase intention is overall satisfaction. Hence the analysis of direct path indicates the mediator role of overall satisfaction in between service quality and outcome variables.

Mediating Impact of overall Satisfaction (Tests Hypotheses H_6 and H_7)

The overall satisfactions mediate the antecedent variables (DSQ and ISQ) and outcome variables (Repurchase Intention and Words-of-mouth). The $H_{6.a}$ and $H_{6.b}$ reveals the mediating role of overall satisfaction in between antecedent variables (DSQ and ISQ) and repurchase intention whereas the $H_{7.a}$ and $H_{7.b}$ posits the mediating role of overall satisfaction in between antecedent variables and words-of-mouth. The present study ran two PLS models to determine that there is a relation ship between the antecedents and two outcome variables. As can be seen in Table-IV under "Mediation test stage 1 antecedents to outcome variables", all antecedents have a statistically significant relationship with the two dependent (outcome) variables. These findings reflect the findings of Baron and Kenny's (1986).

The PLS model had been administered to establish the relationship between antecedents and the mediator. Again, the two antecedents were significantly related to the mediator variable (overall satisfaction). The condition is that the mediator must affect the outcome variable. Because the study has two dependent variables namely repurchase intention and words-of-mouth, whilst controlling for the effect of the mediator on the two outcome variables. The tests revealed that the mediator has a statistically significant effect on the two dependent variables, hence our tests reveal that the conditions exist for mediation.

Finally, the study used the PLS model to determine which paths were mediated, and whether that mediation was full or partial. The path coefficients and standard errors from our PLS output were then used in Sobel (1982) tests to determine whether the mediating relationships in our research model are greater than Zero and statistically significant. When the mediating effect is divided by its standard error, this yields a Z score for that effect. If the Z score is ≥±1.96, the mediating effect is significant at 0.05 level. Our Sobel (1982) test reveals that overall satisfaction mediates the effects of all two antecedents on two outcome variables. The effect of DSQ on repurchase intention and words-of-mouth is mediated by overall satisfaction (Z=4.63; p=0.000; and Z=3.9114; p<.0168). Similar results found in the case of effect of ISQ on repurchase intention and words-of-mouth (Z=3.2082; p<0.0265; and Z=4.0142: p<0.000) respectively. These results reveals an enough support to the significance of mediating effect of overall satisfaction.

Discussion

Theoretical Implications: The key contribution of this study is that it provides a more comprehensive model of the antecedents and consequences of customer satisfaction with services. This claim is based on the grounds that the study strongly support for all 13 hypotheses in model. Overall, the study findings indicate that:

- Overall satisfaction has multiple antecedents
- Delivery and Installation service quality are the antecedents of overall satisfaction
- The overall satisfaction is the mediator variable between the service quality and two outcomes

namely repurchase intention and positive words-of-mouth.

- Delivery and Installation Service Quality positively influence on overall satisfaction on the two outcomes namely repurchases intention and words-of-mouth.
- The mediation role of overall satisfaction on the two outcomes is greater than the mediation role of any one of the outcomes on other outcome and overall satisfaction. These findings of the study are consistent with the Carunana's study (2002) on service quality in banks and also the findings of the study made by Wirtz and Matilla (2001).

Managerial Implications

Recognition of the importance of the antecedents of satisfaction has several practical implications. First, the Delivery Service Quality implies that managers need to take into account their customers' ideal personality in order to influence the customer satisfaction. The services should be customized according to the customers needs. Secondly, this study suggest that Installation Service Quality influence the customers satisfaction, which in turn influence behavioural intention. So, having in mind that the focus on service quality addressing at enhancement of the generated satisfaction, supports the relationship marketing paradigm in practice, it can be clearly stated that after-sales service influence the perceived value by the customers and thus, the quality of the relationship between buyers and marketers. In total, the study is intended to stress the strategic role that after-sales service quality can play on the value – adding process of the total offering.

Limitation and Future Research

Although the study makes important theoretical contributions to the understanding of the Linkage between antecedents and consequences of after-sales service quality on customer satisfaction and repurchase intention, it has limitations. First, it is restricted to the electronic goods market and so future researchers need to extent this research to other goods. This type of research may try to examine the direct and indirect effects of delivery and installation service quality on repurchase intention, the independent variables related to the service quality may be extended in future research. The mediator role of overall customer satisfaction in between service quality and repurchase intention have been discussed in the present study, it may be extended to the role of many mediator variables in between the dependent and independent variables in future.

The final limitation relates to the use of a non-probability sampling procedure and a relatively small sample. Accordingly, future research should consider the usage of more comprehensive sampling design with a much larger sample.

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Socio - Economic Status and Job Satisfaction of Women Employees in Textile Mills

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Today, many avenues of employment are available to women due to numerous technological developments. More awareness and consciousness are found among women and they compete in almost all the fields with men in India. Textile industry is one that attracts large number of women, offering them employment in various departments. A number of textile mills have been established throughout India. Dindigul district is one such district where many textile units are existing. To state specifically, most of the women members in the families are engaged in any one of the works related to textile industries in the district But the working condition and the salary status of the women employees are yet to be probed in. Therefore, the researchers have made an attempt to analyze the socio-economic conditions and the job satisfaction level of the women employees in the textile mills

Keywords: *Human Resources Management, Textile Employees, Job Satisfaction, Socio-Economic Conditions, Women Employees, Dindigul District*

Introduction

A working woman faces many problems related to her job. Though women have taken up all jobs and professions, their ability to complete the job is always doubted. This hurts their ego. When a woman is working under a male boss, she is often taken as a woman first and worker later. Her politeness and courtesy are often misunderstood. If she is too reserved, she is labelled as haughty and vain and having a superiority complex When working with male colleagues, if she is friendly, she is labelled as a flirt. On the other hand, if she keeps herself aloof, she is labelled as a "Snob" and may be isolated. So, it is a continuous tightrope walk for her. Also her husband's suspicious attitude creates tension in her family life.

Further, the efficiency of a working woman is always suspected. The co-workers in the office cannot mentally accept the superiority of a woman's work. Her subordinate males do not like her authority over them. Also women, by and large, being more sincere than men, are often assigned comparatively more work to do. The results are over loading and they feel exhausted. Women are often regarded as "temporary" employees and are not taken seriously by their employers. This is especially true of unmarried women who often leave the job in the event of their marriage, and treat their job as a "Stop-gap" arrangement to pass their time before marriage. All make the employers prefer women employees. In case of contract labour, the employers often avoid payment of maternity benefit and other facilities by not entering the name of women employees in the register. Also they are often threatened with dismissal or non-payment of wages if they do not report for work soon after child birth. All these problems which are common to all the working places are found in the textile mills also.

Statement of the Problem

Employment frees women from the isolation and drudgery of home. It raises their productivity and social contribution. An employed mother could do real "Mothering" as she has got greater access to the world where her children are going to live in. She has greater range of experience, more personal maturity, ability to take a detached view in less time and avoid the temptation, to be over protective and dominant. This is a psychological gain for the children and ultimately for the nation. Employment outside the home boosts up women's self respect and gives them a sense of achievement.

Today, the management's perception towards the capabilities of women employees and the various reasons advanced by them, seem to be in favour of these employees. Their opinion strikes a note on

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optimism and positiveness in their attitude towards employing women in the textile mills. The major reasons for employing women are the increasing management awareness of the capability, shortage of male employees, distinctive favourable traits of women employees, discipline, passive union activity, easy supervision and better industrial relation. Increase in productivity is the ultimate aim of every industrial organization. For this, labour welfare is an important tool. The labour welfare implies provision of better working conditions. Job performance of employees is based on appropriate working condition. Therefore, productivity is linked with the labour welfare measures As women being the major force in the textile mills, it is necessary to study their conditions in the mills.

Objectives of the Study

The overall objectives of the study are to examine the various socio-economic problems faced by the women employees in the textile mills. The specific objectives of the study are:

(i) To review the status of women employees in the textile mills in Dindigul district, Tamil Nadu.

(ii) To study the socio-economic problems faced by the women employees in the textile mills in Dindigul district.

(iii) To identify the factors influencing the job satisfaction of the women employees in the textile mills in Dindigul district.

(iv) To offer suggestions based on the findings of the study for the prospects of the women employees in the textile mills in Dindigul district.

Methodology

The present study is based on primary data. The main sources of the primary data are the opinion solicited from the women employees. To elicit information from the employees an interview schedule was designed and administered. The interview schedule was pre-tested and suitable modifications were carried out. The schedule has been used for collecting information relating to the personal data of the employees and their problems. The schedule also contains questions relating to the socio-economic status of the women employees. Using the interview schedule the opinions of the women employees were collected. For this purpose a sample of 250 women employees were selected from various textile mills. Before the interview, proper rapport with the employees was established The researcher recorded the data in the interview schedule and after that the filled up schedules were thoroughly checked to ensure accuracy, consistency and completeness. A master table was prepared to sum up all the information. With the help of the master table, classification tables were prepared and they were taken up for analysis. Using Chi-Square test, the association between the socio-economic factors and the level of satisfaction has been analyzed. To analyze the combined influence of the various factors on the level of satisfaction of the women employees, Multiple Regression Analysis was carried out.

Analysis and Interpretation of the Data

The results of the analysis of the collected data are presented below.

Age and Level of Satisfaction

Normally it is stated that the age and the level of satisfaction are inter-related. Aged employees are expected to possess better knowledge in the textile mills. Aged respondents are more aware of the functioning of the mills than the younger employees and the levels of satisfaction are likely to be high. The sample respondents are classified into three age groups. The sample employees in the age group of up to 25 years have been classified as young, those who are between 26 and 50 years are grouped as middle aged and those who are above 50 years are called as old. The level of satisfaction has been classified into low, medium and high based on the opinions given by the employees. Using Chi-square test the relationship between the age group and the level of satisfaction has been tested. For this purpose, the age and levels of satisfaction are given in Table 1.

Table 1: Age Group and Level of Satisfaction

S. No.	Age Group	Level of Satisfaction			Total	Average Score	Range
		Low	Medium	High			
1.	Young	35 (17.2)	50 (50.56)	1 (18.23)	**86**	57.98	45 – 117
2.	Middle	12 (20.4)	64 (74.67)	51 (26.92)	**127**	84.36	42 - 114
3.	Old	3 (7.4)	33 (12.75)	1 (7.84)	**37**	71.89	41 - 114
	Total	**50**	**147**	**53**	**250**	**73.44**	

(Figures given in the brackets represent the Expected Frequency)

To test the association, following null hypothesis has been formulated

Null hypothesis: There is no association between the age group of the respondents and their levels of satisfaction towards the job.

The average satisfaction scores of the different age groups vary from 57.98 to 84.36 There are 86 young respondents with their satisfaction scores ranging from 45 to 117. Their average satisfaction score is 57.98. There are 127 middle aged respondents. Their satisfaction scores range from 42 to 114. Their average satisfaction score is 84.36. There are 37 old respondents their satisfaction scores range from 41 to 114. Their average satisfaction score is 71.89. It is observed from the table that the middle aged respondents secure the highest percentage of satisfaction. It shows that the middle aged respondents are more satisfied with the various working conditions in the textile mills, than the young and old aged respondents. As the calculated Chi-square value (75.62) is greater than the table value (9.488) at 5% level of significance for 4 degrees of freedom, the null hypothesis is rejected and it can be concluded that the association between the age group of the respondents and their level of satisfaction towards the job is significant.

Education and Level of Satisfaction

Education of employees and the level of satisfaction are taken into consideration, to assess whether their educational qualification influences satisfaction. The sample employees are classified according to their levels of education namely, primary level, secondary level and technical level as shown in Table 2. The level of satisfaction has been classified into low, medium and high based on the opinion given by the employees. Using Chi-square test the association between the education and the levels of satisfaction has been tested. For this purpose, the education and the levels of satisfaction are given in Table 2.

The average satisfaction score of different groups of respondents, on the basis of their education, varies from 63.73 to 82.09. There are 83 respondents who have primary education and their satisfaction scores range from 41 to 114. Their average level of satisfaction score is 63.73. There are 134 respondents who have secondary level education.

Table 2: Education and Level of Satisfaction

S. No.	Education	Level of Satisfaction			Total	Average Score	Range
		Low	Medium	High			
1.	Primary	29 (16.6)	48 (48.80)	6 (17.59)	**83**	63.73	41 – 114
2.	Secondary	18 (26.8)	80 (78.79)	36 (28.4)	**134**	77.32	42 – 117
3.	Technical	3 (6.6)	19 (19.40)	11 (6.99)	**33**	82.09	43 - 108
	Total	**50**	**147**	**53**	**250**	**73.44**	

(Figures given in the brackets represent the Expected Frequency)

To test the association, following null hypothesis has been formulated:

Null hypothesis: The association between the education of the respondents and their levels of satisfaction towards the job is not significant.

Their satisfaction scores range from 42 to 117. Their average level of satisfaction score is 77.32. There are 33 respondents with technical education. Their satisfaction scores range between 43 and 108. Their average satisfaction score is 82.09. It is inferred from the table that the average satisfaction score of the employees with technical education is higher than those of the other groups. As the calculated Chi-square value (26.07) is greater than the table value (9.488) at 5% level of significance for 4 degrees of freedom, the null hypothesis is rejected and it could be concluded that the association between the educational qualification of the respondents and their level of satisfaction towards the job is significant.

Marital Status and Level of Satisfaction

An attempt is made to find out whether the level of satisfaction varies in respect of the marital status of the respondents. The average satisfaction score of the marital status varies between 65.46 and 75.64 as shown in Table 3. There are 196 married respondents. Their satisfaction score ranges from 42 to 117. Their average level of satisfaction score is 75.64. There are 54 unmarried respondents. Their satisfaction scores range from 41 to 114. Their average satisfaction score is 65.46. It is inferred from the table that the average satisfaction scores of the employees who are married is higher than those of the other groups. Hence, it indicates that the married employees have high level of satisfaction than the unmarried employees. The level of satisfaction has been classified into low, medium and high based on the opinion given by the employees. Using Chi-square test the association between the marital status and the levels of satisfaction has been tested. For this purpose, the marital status and levels of satisfaction are given in Table 3.

Table 3: Marital Status and Level of Satisfaction

S. No.	Marital Status	Level of Satisfaction			Total	Average Score	Range
		Low	Medium	High			
1.	Married	34 (39.4)	117 (115.24)	45 (41.55)	**196**	75.64	42 - 117
2.	Unmarried	16 (10.8)	30 (31.75)	8 (11.4)	**54**	65.46	41 - 114
	Total	**50**	**147**	**53**	**250**	**73.44**	

(Figures given in the brackets represent the Expected Frequency)

To test the association, following null hypothesis has been formulated:

Null hypothesis: The association between the marital status of the respondents and their levels of satisfaction towards the job is not significant.

As the calculated Chi-square value (4.61) is less than the table value (5.991) at 5% level of significance for 2 degrees of freedom, the null hypothesis is accepted and it could be concluded that the association between the marital status of the respondents and their levels of satisfaction towards the job is not significant.

Status of Employment and Level of Satisfaction

Status of employment of the employees in the textile mills is taken into consideration to assess whether their status of employment influences satisfaction. The sample respondents are grouped on the basis of their status of employment into three groups namely permanent, temporary and contract. The level of satisfaction has been classified into low, medium and high based on the opinion given by the employees. Using Ch-square test, the association between the status of employment and level of satisfaction has been tested. For this purpose, the status of employment and levels of satisfaction are given in Table 4.

Table 4: Status of Employment and Level of Satisfaction

S. No.	Status of Employment	Level of Satisfaction			Total	Average Score	Range
		Low	Medium	High			
1.	Permanent	15 (17.8)	46 (52.33)	28 (18.86)	**89**	75.55	41 – 117
2.	Temporary	18 (18 6)	54 (54.[illegible])	21 (19.7)	**93**	74.60	42 - 114
3.	Contract	17 (13.6)	47 (39.98)	4 (14.41)	**68**	64.90	45 - 104
	Total	**50**	**147**	**53**	**250**	**73.44**	

(Figures given in the brackets represent the Expected Frequency)

To test the association, following null hypothesis has been formulated:

Null hypothesis: The association between the status of employment of the respondents and their levels of satisfaction towards the job is not significant.

The average satisfaction score of different groups on the basis of status varies from 64.90 to 75.55. There are 89 respondents placed in permanent job, having their satisfaction scores ranging from 41 to 117. The average satisfaction score is 75.55. There are 93 respondents who are on temporary basis. Their satisfaction scores range from 42 to 114. Their average satisfaction score is 74.60. There are 68 contract employees who have their satisfaction scores ranging from 45 to 104. Their average satisfaction score is 64.90. It is observed from the table that the respondents employed in a permanent job secured the highest percentage of average satisfaction. This shows that these respondents are more satisfied on the various working conditions in the textile mills in Dindigul. As the calculated Chi-square value (15.31) is greater than the table value (9.488) at 5% level of significance for 4 degrees of freedom, the null hypothesis is rejected and it could be concluded that the association between the status of employment of the respondents and their level of satisfaction towards the job is significant.

Skill Level and Level of Satisfaction

The level of skill acquired by the employees has been taken into account for the study. For this, the employees are classified into three categories on the basis of the level of skill acquired by them namely skilled, semi-skilled and unskilled. The average satisfaction scores on the level of skill vary between 62.25 and 77.28. There are 56 respondents who acquired more skill in the mills. Their satisfaction scores range from 41 to 106. Their average level of satisfaction score is 62.25. There are 158 respondents designated as semi-skilled employees, whose satisfaction scores range from 42 to 117. Their average level of satisfaction score is 77.28. The next group consists of 36 respondents who are designated as unskilled employees. Their satisfaction scores range from 46 to 115. Their average level of satisfaction score is 73.97. The level of satisfaction has been classified into low, medium and high based on the opinion given by the employees. Using Chi-square test, the association between the skill level and level of satisfaction has been tested. For this purpose, the skill level and levels of satisfaction are given in Table 5

Table 5: Skill Level and Level of Satisfaction

S. No.	Skill Level	Level of Satisfaction			Total	Average Score	Range
		Low	Medium	High			
1.	Skilled	24 (11.2)	28 (32.92)	4 (11 87)	**56**	62.25	41 – 106
2.	Semi-skilled	22 (31.6)	91 (92.90)	45 (33.49)	**158**	77.28	42 – 117
3.	Unskilled	4 (7.2)	28 (21.16)	4 (7.63)	**36**	73.97	46 – 115
	Total	**50**	**147**	**53**	**250**	**73.44**	

(Figures given in the brackets represent the Expected Frequency)

To test the association, following null hypothesis has been formulated:

Null hypothesis: The association between the skill level of the respondents and their levels of satisfaction towards the job is not significant.

It could be observed from Table 5 that, the average satisfaction of respondents who are designated as semi-skilled employees is the highest (77.28). The percentage of respondents with high level of satisfaction is the highest in the group who are designated as semi-skilled, and the percentage of respondents with low level of satisfaction is the lowest in the group who are designated as unskilled. As the calculated Chi-square value (32.78) is greater than the table value (9.488) at 5% level of significance for 4 degrees of freedom, the null hypothesis is rejected and it could be concluded that the association between the skill levels of the respondents and their levels of satisfaction towards the job is significant.

Size of the Family and Level of Satisfaction

The size of the family indicates the number of dependents in the family. If the dependents are more, the families will face additional problems. In order to verify the statement, the employees are divided into three groups namely, small family (below four members), middle sized family (four to six members) and large family (above six members). The average satisfaction of the different sizes of family varies from 70.59 to 74.73. There are 68 respondents with small families. Their satisfaction scores range from 41 to 115. Their average satisfaction score is 70.59. The level of satisfaction has been classified into low, medium and high based on the opinion given by the employees. Using Chi-square test, the association between the size of the family and level of satisfaction has been tested. For this purpose, the size of the family and levels of satisfaction are given in Table 6. To test the association, following null hypothesis has been formulated:

Table 6: Family Size and Level of Satisfaction

S. No.	Size of the Family	Level of Satisfaction			Total	Average Score	Range
		Low	Medium	High			
1.	Small	17 (13.6)	42 (39.98)	9 (14.41)	**68**	70.59	41 – 115
2.	Middle	29 (30.6)	84 (89.96)	40 (32.43)	**153**	74.73	42 – 117
3.	Large	4 (5.8)	21 (17.05)	4 (6.1)	**29**	73.31	41 - 109
	Total	**50**	**147**	**53**	**250**	**73.44**	

(Figures given in the brackets represent the Expected Frequency)

Null hypothesis: The association between the family size of the respondents and their levels of satisfaction towards the job is not significant.

There are 153 sample respondents with middle-sized families who have their satisfaction scores ranging from 42 to 117. Their average satisfaction score is 74.73. There are 29 large families who have their satisfaction scores ranging from 41 to 109. Their average satisfaction score is 73.31. It could be observed from the above table that the average satisfaction of the respondents, who have middle-sized families, is higher than those of the other groups. The percentage of high-level satisfaction is high among the employees belonging to middle-sized families and the percentage of low-level satisfaction is high among the employees belonging to small families. As the calculated Chi-square value (7.42) is less than the table value (9.488) at 5% level of significance for 4 degrees of freedom, the null hypothesis is accepted and it could be concluded that the association between the family size of the respondents and their level of satisfaction towards the job is not significant.

Monthly Income and Level of Satisfaction

The monthly family income of the sample employees has been taken into account for the study. It is expected that, higher the income level of the employees, the more would be the satisfaction. For this the monthly income of the sample respondents is divided into three groups namely those up to Rs.2,000 (low), those with Rs.2,001 to Rs.4,000 (middle) and those above Rs.4,000 (high). The level of satisfaction has been classified into low, medium and high based on the opinion given by the employees. Using Chi-square test, the association between the monthly income and the levels of satisfaction has been tested. For this purpose, the monthly income and levels of satisfaction are given in Table 7. To test the association, following null hypothesis has been formulated:

Table 7: Monthly Income and Level of Satisfaction

S. No.	Monthly Income	Level of Satisfaction			Total	Average Score	Range
		Low	Medium	High			
1.	Low	22 (12.8)	33 (27.63)	9 (13.5)	**64**	66.67	42 - 114
2.	Middle	16 (16.2)	54 (47.6	11 (17.1)	**81**	69.94	41 - 112
3.	High	12 (21.0)	60 (61.7	33 (22.26)	**105**	80.27	41 - 117
	Total	**50**	**147**	**53**	**250**	**73.44**	

(Figures given in the brackets represent the Expected Frequency)

Null hypothesis: The association between the monthly income of the respondents and their levels of satisfaction towards the job is not significant.

It could be noted from the table that the average satisfaction of lower income group of respondents is 66.67. Their satisfaction scores range from 42 to 114. There are 81 middle-income respondents and their average level of satisfaction score is 69.94. Their satisfaction scores range from 41 to 112. There are 105 respondents of higher income group and their satisfaction scores range from 41 to 117. Their average level of satisfaction score is 80.27. It is inferred from the above table that the average satisfaction score of high income group is the highest and the average satisfaction score of other groups of the employees is lower than the overall average satisfaction. It clearly shows that the employees of high income group have more satisfaction than the low and middle income groups of employees. The table indicates that, in all groups except in the low and middle – income groups, the differences in the average satisfaction scores are significant with respect to income and satisfaction. As the calculated Chi-square value (20.86) is greater than the table value (9.488) at 5% level of significance for 4 degrees of freedom, the null hypothesis is rejected and it could be concluded that the association between the monthly income of the respondents and their level of satisfaction towards their job is significant.

Multiple Regression Analysis

After analyzing the relationship of each factor with the employees' satisfaction, in the present section the analysis made in the previous section has been carried forward into a regression analysis. The result of simple correlation analysis made to test the relationship between the selected factors and the levels of satisfaction is given in Table 8.

Table 8: Simple Correlation of Selected Factors Related to Employee Satisfaction

S. No.	Factors	Correlation Co-efficient	Table Value "r"	Significance
1.	Age	0.677	0.124	Significant
2.	Education	0.337	0.124	Significant
3.	Marital Status	-0.211	0.124	Significant
4.	Status of Employment	0.269	0.124	Significant
5.	Skill Level	0.822	0.124	Significant
6.	Experience	0.121	0.124	Not Significant
7.	Size of the Family	0.063	0.124	Not Significant
8.	Monthly Income	0.287	0.124	Significant
9.	Membership	-0.014	0.124	Not Significant

It shows that there is a significant relationship between the seven factors and satisfaction.

Inter Correlation

After the simple correlation analysis, in this study, to find out the combined effect of the various individual factors on the level of satisfaction, a multiple regression analysis has been carried out. For this purpose, initially the inter correlation among the nine selected factors has been worked out and presented in Table 9.

Table 9: Inter Correlation among Independent Variables

	X_1	X_2	X_3	X_4	X_5	X_6	X_7	X_8	X_9
X_1	1	0.677	0.337	-0.211	0.269	0.822	0.121	0.063	0.287
X_2	-	1	0.150	0.325	0.286	0.007	0.166	0.057	0.174
X_3	-	-	1	0.203	0.058	0.822	0.011	0.144	0.120
X_4	-	-	-	1	0.137	0.068	0.037	0.021	0.050
X_5	-	-	-	-	1	0.125	0.293	0.227	-0.171
X_6	-	-	-	-	-	1	0.637	0.310	0.663
X_7	-	-	-	-	-	-	1	0.050	0.350
X_8	-	-	-	-	-	-	-	1	-0.014
X_9	-	-	-	-	-	-	-	-	1
Table value of correlation = 0.124									

In the multiple regression analysis, the level of satisfaction (Y) has been kept as dependent on the nine factors namely age (X_1), education (X_2), marital status (X_3), status of employment (X_4), skill level (X_5), experience (X_6), size of the family (X_7), monthly income (X_8) and membership in association (X_9) have been taken as influencing factors. The result of regression analysis is presented in Table 10.

Table 10: Multiple Regression Analysis of Nine Factors Related to Employee Satisfaction

S. No.	Factors	Partial Regression	SE of Partial Regression	"t" Value	Significance
1.	Age	10.741	2.181	4.925	Significant
2.	Education	5.634	1.821	3.094	Significant
3.	Marital Status	-2.131	2.985	-0.714	Not Significant
4.	Status of Employment	-3.774	1.462	-2.582	Significant
5.	Skill Level	2.271	1.092	2.083	Significant
6.	Experience	-3.603	1.769	-2.037	Significant
7.	Size of the Family	-0.736	1.969	-0.374	Not Significant
8.	Monthly Income	18.722	3.423	5.469	Significant
9.	Membership	4.384	4.267	1.027	Not Significant

Percentage of predictability = 62.80 %

The Partial Regression Co-efficient of the seven factors with employee satisfaction is significant (Table 10) indicating that the seven factors individually contribute significantly to variations in the satisfaction of employees when the influences of the other factors are kept constant. As R^2 value is 0.628, the percentage of predictability of employees' satisfaction in terms of these factors is 62.80%.

As the Partial Regression Co-efficient of six of the above factors is significant, the Multiple Regression analysis has been repeated for the six significant factors and the results are given in Table 11.

Table 11: Multiple Regression Analysis of Six Factors Related to Employee Satisfaction

S. No.	Factors	Multiple Regression	SE of Multiple Regression	"t" Value	Significance
1.	Age	10.844	2.068	5.244	Significant
2.	Education	6.471	1.758	3.681	Significant
3.	Status of Employment	-4.472	1.403	-3.187	Significant
4.	Monthly Income	3.320	1.450	2.289	Significant
5.	Skill Level	2.541	1.060	2.399	Significant
6.	Experience	-4.492	1.568	-2.865	Significant

Percentage of Predictability = 61.30%

The Multiple Regression Co-efficient of six factors with the employees' satisfaction has shown that all the six factors individually contribute significantly to the variation in the employees' satisfaction when the influences of other factors are kept constant. The percentage of predictability of employees satisfaction in terms of these six factors is 61.30%. This is normally less than that, in terms of nine factors (62.80%). This clearly indicates that the other factors have very little influence on the satisfaction of the employees.

Suggestions

In the light of the findings of the present study the following suggestions are offered to improve the status and to increase the level of satisfaction of the women employees in the textile mills.

(i) Education has been found to influence the morale level of the women employees. The textile mills must provide adequate opportunities for carrier growth and advancement. They must provide recognition for achievements and will inspire employees.

(ii) The management should come forward to provide stipend, scholarship, mid-career grants and paid study leave to the women employees. This should be provided for them to continue their education through Distance Education, Open University system and pave the way for practical and technical training in the new departments

(iii) Majority of the women employees received a monthly income of less than Rs.3,000. Taking into account the rising price level at the rate of inflation prevailing in the economy, their income declines in real terms. This makes the respondents to go for borrowings, which again will affect their efficiency. Availing opportunities for additional income is suggested in this regard to the respondents who come under low income category. The respondents being industrial employees they can plan for starting some cottage industrial works and other small businesses which will enable them to earn additional income to meet their family expenditure. Further this will curtail their tendency of borrowing.

(iv) With a view to promote the habit of thrift and savings among the 54 women employees who do not have savings at present, starting a co-operative thrift society by the mill employees would go a long way in promoting their savings and curtailing their unnecessary expenditure in their families.

(v) The status of employment of the women employees in the textile mills has been found to influence their satisfaction. Therefore, efforts should be taken to treat the women employees as full fledged employees of the textile mills rather than as contract and temporary wage earners, so that the management can control their activities effectively.

(vi) It is found that 158 respondents live in rented houses and it is also found that the monthly rent amount goes up to Rs.600/-. It is suggested that these respondents can make use of the loan facilities available in the Housing Development Financial Corporation (HDFC). This will help them to possess asset in the form of a house and the rental expenses can also be avoided.

(vii) The Government may encourage the women employees to organize themselves into effective association. The association can take up all issues with different departments of the Government and the other private agencies.

(viii) The sobriety and patience of women will go a long way in preventing many a strike. So, it is an advisable one to employ more women employees and they should be encouraged to become active members and office bearers in trade unions.

(ix) It is appropriate to note that the Madras High Court has declared Section 66 (1) (b) of the Factories Act as unconstitutional on 8th December 2000. The main object of Section 66 (1) (b) of the Factories Act, 1948 is to protect the employees from exploitation and it is for their interest and safety. This section restricts women employment between 10.00 p.m. and 5.00 a.m. The High Court has held that women cannot be excluded from employment during night shifts. Further the court has given certain guidelines and welfare measures for the employees who came forward to work during the night shifts till the control and state authorities introduce suitable provisions and frame necessary rules. The present study suggests that the Government should come forward to enact the same.

Conclusion

(i) Today, the role of women employees in all walks of life has attained a dramatic change and dimension.

(ii) As women are more productive, passive and perfect in discharging their duties the present study is highly useful and valuable.

(iii) The researchers present this study with the fervent hope that this will draw the attention of the managements of the textile mills in Dindigul on the various issues in respect of the women employees' status and satisfaction.

(iv) If the study helps the management and women employees in the textile mills in any form for their enlightment and development, the researchers will feel that they are amply rewarded.

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Book Review

David Jacoby (2010)
Guide to Supply Chain Management
The Economist in Association with Profile books Ltd.
Viva Books Private Limited, New Delhi
x+262,
Price: Rs. 350 (Soft)

The first question that is likely to pop up in the reader's mind is "Why a review on a book on Supply Chain Management?" Actually, Supply Chain Management pervades all sectors and is a buzzword in the industry today. Hence this book review. The book under review is not academic in style or content, it is ideal for corporates, entrepreneurs, professionals, students and anyone who is interested in understanding what "Supply Chain Management" is all about.

Since the term 'supply chain management' contains the word 'supply', many people believe that supply chain management (SCM) deals with procuring or purchasing raw materials from suppliers. This notion may partly be true, but, in sooth, SCM encompasses the entire process of procuring raw material from the supplier's supplier to manufacturing and distributing goods to the customer's customer. SCM encompasses Material requirements planning, Manufacturing resource planning, warehouse management systems, transportation management systems, advanced planning and scheduling, enterprise resource planning, customer relationship management, supplier relationship management and product life-cycle management. The objective of MRP I (Material Requirements Planning) is to calculate the requirements of material through the application of a bill of material (or bill of recipes), inventory and a master production schedule. The objective of MRP II (Manufacturing Resource Planning) is to plan resources for all production activities which includes materials, labour and machine usage. ERP (Enterprise Resource Planning) implies computerisation of MRP I and MRP II. With the rapid advancements in technology such as Global Positioning Systems (GPS) on delivery trucks which provide real-time access to the status of in-transit inventory, Electronic Data Interchange (EDI), E-payments, sales force automation software, the internet which has added a new marketing channel altogether (it is said that the internet is the shortest distance between two points), companies using data warehousing and data mining to gather their consumers' tastes, preference and understand their buying pattern and behaviour, just-in-time inventory, just-in-time delivery, it has become all the more imperative to understand the intricacies of SCM.

The term supply chain management entered the public domain when consultant Keith Oliver, of strategy consulting firm Booz Allen Hamilton used it in an interview with Financial Times in 1982. Today, SCM has become a management buzzword. Several professional associations such as The Association for Manufacturing Excellence (AME), The Association for Operations Management (APICS), Council of Supply Chain Management Professionals (CSCMP), International Warehouse Logistics Association (IWLA) have developed certification programs in SCM.

The book titled "Guide to Supply Chain Management" contains thirteen exhilarating chapters. The first chapter looks into production scheduling the way it was practised before the Industrial Revolution to the form it is has taken today. The author has prolifically brought out the effect of mass production, labour and unionisation, deregulation, globalisation, customisation, personalization, individual auto-replenishment. The chapter has four illustrations that describe the flow from the first supplier (who might usually be a farmer or extractor) to the end-customer. The second chapter explores the bullwhip effect and extends the 'Chaos theory' propounded by Henri Poincare in 1890; and the seminal work of Edward Lorenz 'Predictability: Does the Flap of a Butterfly's Wings in Brazil Set Off a Tornado in Texas?" The third chapter provides a splendid insight into transportation, logistics, purchasing, manufacturing, customer service, operations management, supply chain, supply chain management, the four principles of supply chain management (efficiency, reliability, flexibility, innovation), supply chain professional and four supply chain strategies.

The fourth chapter examines the necessity of providing value-added services due to shorter product life-cycles and competition which is turning fiercer day by day. The chapter then delves into the primary benefit of SCM which results in an improvement in the economic value added (EVA). The latter part of the chapter covers SCM practices being followed in Vietnam, Thailand and China. The fifth chapter is devoted to the difference between supply chain management and supply chain strategy; and the four generic supply chain strategies (rationalisation, synchronisation, customisation and innovation). The sixth chapter explains the elements of rationalisation strategy, strategic sourcing and outsourcing, lean manufacturing, the 5S (for sort sequence, shine, standardise and sustain) approach and Total Quality Management. The seventh chapter provides a brilliant exposition of the Toyota production system, make-to-order (MTO) model, classifying measuring and monitoring risk. The eight chapter is devoted to avoiding commoditisation through customisation and the seven production process models. The ninth chapter articulates a strategy for creating dynamic supply chains. The tenth chapter relates organising to SCM and builds a supply chain organisation maturity model. The eleventh chapter explains the components which are required for making a SCM system IT capable. An adage goes, "you get what you measure". The twelfth chapter explains various metrics (including a few which are unique to a few of the world's leading companies) for measuring supply chain processes. The thirteenth chapter looks into the challenges to the SCM. The chapter provides many leads to concepts which can be extended to provide a complete face-lift to the existing SCM systems.

This book effectively distils the essential supply chain concepts into a convenient reference which can be easily understood. The author has addressed service industries as well as manufacturing and materials-based industries from the new as well as the old economy. It is a treasure-house of case studies, data analysis and examples drawn from a number of companies around the globe. The book can be very helpful to management students as well as practitioners as it provides examples from the practices at Tesco – a UK retailer, MTR Foods India, Dell, FedEx, Honda, Nokia, Starbucks, US online movie distributor Netflix, Spanish clothing retailer Zara, New York City Housing Authority, Quatar Fuel, French cosmetics company L'Oreal and several other leading companies.

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Book Reviews

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EDITOR'S NOTE

Innovation and innovativeness are two buzzwords that can be interchangeably coined to define the degree of competitiveness that an Institution can boast of to stay afloat in the competitive business environment. This is a must to leverage predictable gains from company's product-specific USP under dynamic and volatile market conditions, characterized predominantly by business / market risks. A clear and comprehensive understanding of the intricate relationship between innovativeness and the degree competitiveness is therefore fast becoming an important facet for strategic business operations universally; as the state of corporate challenges to retain market leadership upfront is gaining momentum over narrower time-horizon. The current issue of ABR provides a glimpse of this vast spectrum in a selective and illustrative manner in an attempt to link its research findings to the business frontier of tomorrow to help create new opportunities.

The current issue of ABR contains a collection of 18 research papers, encompassing a good sprinkling of innovative themes related to emerging markets such as: Impact of Global Financial crisis on Indian Stock Market, E-commerce portal service quality, Corporate Dividend policy, Banking Service quality, Mutual Fund Industry, TQM, Joint ventures, Aviation and Automobile Industries, Entrepreneurship, Emotional Intelligence, CRM & Brand building, Leadership development and International Trade practices.

The paper of Muthukumaran *et al.,* analyses and measures the impact of Global financial crisis in general and on Indian Stock Market in particular. The result of the study suggests that the India Stock market was indeed adversely affected by the Global financial crisis. Bhattacharya and the associates have conducted an empirical study on validation of Ecommerce portal and to what extent this can be implemented to evaluate the service quality of Government digital services offered over the internet. Saravanakumar empirically analyzes the determinants of dividend payment for the top 50 companies in terms of market capitalization, listed in the National Stock Exchange. This study also looked at the influence of the factors like net profits, liquidity and reserve position, share prices, investors' expectations, volume of sales, windfall gains etc. on the dividend decisions of corporate.

Due to the rising competition and liberalization the banking industry has become the buyer's market. Banks need to create and develop the services which can satisfy the consumer needs. Singh and Kaur identified six service quality factors which broadly influence customer satisfaction regarding banking services and their analysis revealed that satisfaction level of rural customers is higher as compared to urban customers. There are different kinds of mutual fund schemes available with different features to cater to the needs of different people. In the study conducted by Kasilingam and Jayabal different mutual fund schemes are mapped using multidimensional scaling from customer perspective on the features of different schemes. The findings from this study will be useful to the mutual fund operators to understand where there is a gap and where there is a cluster; and accordingly they can bring new schemes for investment or restructure the existing schemes. To add value to further study on Mutual Fund industry, Anup Pandey provides details about the growth of Mutual fund industry in India. It also throws some light on major mutual fund companies in India, the different types of mutual funds on the basis of structure, investment, load and schemes and the different phases of growth of mutual fund industry.

Venkateshwarlu and his associates conducted a case study on the impact of Total Quality Management (TQM) implementation on the employee's skill development in an auto company. Results indicated an overall improvement in quality of supplies, improved quality of processes, improved employee satisfaction and improved customer satisfaction after TQM implementation. Like automobiles, aviation industry is also facing stiff completion in the domestic and global market. In this context two interesting papers on the themes of Performance Evaluation of Indian Airline Industry by Singh and Factors Influencing the Choice of Domestic Airlines in Chandigarh by Bawa are relevant and interesting. Both successful Joint Ventures (JVs) and failed investments have been reported recently. Kharabesh investigates the factors that are critical to the success of the Australian-Malaysian joint ventures (JVs). He found that factors fostering trust, information-sharing and cultural understanding among IJV participants improve their chances for success. Other success factors include goal convergence and synergy, effective governance and geographic proximity.

The role of gender in economic development process has been increasingly recognized as crucial, both in terms of potential for success as also determining the impact of particular development strategies on the success of programs Sinha *et al's* study of impact of HRD intervention on Women Entrepreneurship Development in Jharkhand shows that apparently there is no role of education in starting an enterprise; but it plays an important role in improving the entrepreneurial quality and performance of the enterprise. There has been an increase in the interest in building the concept and application of emotional intelligence in different organizations in past two decades. Ahuja's study has clearly brought out the role of emotional intelligence in work performance of executives in insurance industry. The findings of this study can have great implication for insurance organizations, HR professionals, trainers and researchers. Ashish Gupta critically reviews of the history of relationship management in consumer markets, and incorporates important conceptual, practical, empirical and popular contribution. A number of critical issues which remain unresolved are also identified in the paper.

Marketing practitioners have long believed that personal values do in many ways impact consumer behaviour and attitudes. Muralie and Mittal's paper identifies the significance of product-specific values that impact attitudes in users buying behaviour of automobiles. Agrawal and Swaroop's study reveals that building employer brand image through good recruitment practices can serve as an effective strategy to attract and retain the talented employees in an organization; including in educational institution. Velayudhan and his associates studied the effectiveness of a Leadership Development Intervention in improving Leadership Skills among students in Coimbatore district. Their results indicate the usefulness of a Leadership Development Intervention programme among students. Sengupta's paper on Globalization and Economic asymmetries in International Trade and development focuses on the various key features of contemporary globalization and international competitiveness, underscoring the growing interdependence of the developed and the developing countries and the resultant political as well as economic stakes . The paper also brings out a comprehensive viewpoint on both challenges faced and opportunities created by economic asymmetries and globalization.

We sincerely hope that the readers will find the current issue of ABR informative. I would like to place on record our deepest sense of appreciation to the contributors of papers who have shared their thoughts with other research workers through this Journal to stimulate innovative ideas.

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Impact of Global Financial Crisis on Indian Stock Market - An Analytical Study

T. Muthukumaran[1], A. Senthamil Raja[2] and P. Palanichamy[3]

In this paper, an attempt has been made to measure the impact of Global Financial Crises on Indian economy in general and on the Indian Stock Market in particular Additionally, this study intends to discuss the role of RBI in the present context and to examine the relationship between the Indian stock market and US stock markets This paper employs the data from January 1, 1999 to December 31, 2008 to investigate the impact on Indian stock market and the integration of Indian stock market and US stock market The result suggests that the Indian Stock market was affected by the Global financial crunches

Keywords: *Global Financial Crisis, Indian Stock Market*

Introduction

After globalization and liberalization, the financial system in India has undergone a rapid change and this paved the way for adoption of new economic policy that routed our capital market more broad based with the starting of OTCEI, NSE etc. Due to momentum gained by globalization, our financial markets were at forefront. Recent financial meltdown although appearing ruinously from the current view point by no means a unique event such as the US stock market crash in 1987, the breakdown of the European monetary system in 1992, the turmoil in bond market in 1994 and the Asia-Pacific crisis beginning in 1997 were all extra ordinary events. In today's fast moving financial world, there were many factors like political environment, economic integration, electronic development, development of trade, growth of capital market, fiscal disciplines and control of economy bends the type of culture of financial market. The existence of economic and trading links, the increase in liberalization activities of governments, the advancement of international trade and finance, rapid development in telecommunication and the formation of common trading blocs such as NAFTA, EU and ASEAN were vital factors contributing to financial integration. In this paper, an attempt has been made to measure the impact of Global Financial Crisis on Indian economy in general and on the Indian Stock Market in particular. Further, the study intends to discuss the role of RBI in the present context and to examine the relationship between the Indian stock market and US stock markets.

Statement of the Problem

In India, the stock market has undergone significant transformations with the liberalization measures. The Bombay Stock Exchange (BSE) of India has emerged as one of the largest stock exchange in the world in terms of number of listed companies, comprising many large, medium-sized and small firms. The inflow of foreign capital has made a crucial contribution to the growth of the stock market. India has become a major destination, representing about a fourth of total portfolio capital inflows to the emerging market economies (EMEs) group. India has also engaged in various bilateral trade and economic co-operation agreement with several countries and regional groups across Asia, Europe and the Western Hemisphere. Our stock market had been growing day by day in the competitive world economy. Hence, a study was made to examine the effect of risk exposure towards global financial crisis and present scenario of Indian Stock Market aftermath of crisis.

Objective of the Study

The principle objectives of the study were to examine the impact of global financial crisis on Indian Stock Market, more specifically, the study was intended to:

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(a) understanding how the global financial crisis is being transmitted to the Indian economy;

(b) estimate the risk and return on Indian Stock Market and;

(c) Examine the relationship between the Indian Stock Market and US Stock Market.

Review of Literature

In the literature, the integration of global equity markets has been a well studied topic since the stock market crash of October 1987. Though most of the studies had initially been conducted for the developed markets like the US, European countries and Japan, recently, Post Asian crisis in particular; literature has started focusing on emerging Asian markets. A small body of literature exists in the Indian Context also. It was observed that there were no studies in the Indian context looking ahead the impact of the crisis which affected USA stock market on India's stock market that is of a most recent issue. Therefore, the aim of this study was to test whether there exist an effect of the recent crisis on Indian Stock Market.

The studies such as Yang and Lim (2002) in an empirical study of nine East Asian stock markets for the period January 1990 to October 2000 found some evidence of short-term linkages. Their results indicated that there was a significant difference between sub-periods pre and (during) post-Asian crisis, with an overall improvement of correlation coefficient for each pair from the pre-crisis to the post crisis period, except for Malaysia and Taiwan. Unlike results from short run tests, there was no long run co movement among East Asian Stock markets, as the absence of co integration in the post-crisis period rules out the existence of a long-term equilibrium trending relationship among East Asian stock markets. Nath and Verma (2003) examine the interdependence of the three major stock markets in South Asia Stock Market indices namely India (NSE-Nifty) Taiwan (Taiex) and Singapore (STI) by employing bivariate and multivariate cointegration analysis to model the linkages among the stock markets, Noco – integration was found for the entire period (daily data from January 1994 to November 2002). They concluded that there is no long run equilibrium. Lamba (2005) implemented a large sample to investigate the presence of long-run relationship between South Asian equity markets and the developed equity markets for the period through July 1997 to Dec 2003. His results indicated that Indian market was influenced by developed equity markets of US, UK and Japan. Raj and Dhal (2008) examines the integration of India's Stock market with global markets such as the United States, the United Kingdom and Japan, along with some other major regional markets such as Singapore and Hong Kong. Empirical evidence supported the international integration of India's Stock Market in terms of US dollars but not in local currency, a finding attributable to investment decision of foreign Investors. P. K. Mishra, K. B. Das and B. R. Pradhan (2009) examined the efficiency of Indian stock market in the context of recent global financial crisis. Stock market efficiency suggests that stock prices incorporate all relevant information when that information is readily available and widely disseminated, which implies that there is no systematic way to exploit trading opportunities and acquire excess profits. In other words, stock prices follow a random walk which holds that stock price changes are independent of one another. The study, by employing the unit root tests on the sample of daily stock returns, presents the evidence of weak form market inefficiency in India. The study further examines the mean reversion implication of market inefficiency and suggests the existence of mean reversion illusion in India.

Global Financial Crisis: A Theoretical Backdrop

A financial crisis refers to a loss of confidence in a country's currency or other financial assets causing international investors to withdraw their funds from the country. Financial crisis was applied broadly to a variety of situations in which some financial institutions or assets suddenly lose a large part of their value. Financial crisis includes stock market crashes and the bursting of other financial bubbles, currency crises, and sovereign defaults. The world's economy was in difficult time period due to the intensification of global financial crisis following the bankruptcy of Lehman Brothers in September 2008. The global macro economic imbalance such as saving-investment and huge cross border financial flows put great stress on the financial intermediation process and major cause for the crisis.

Impact on India

The Indian economy looked to be relatively insulated from the global financial crisis that started in August 2007 when the 'Sub-Prime Mortgage Crisis first surfaced in the US. The impact of global crisis has been transmitted to the Indian economy through three distinct channels, viz., Financial Sector, Exports and Exchange Rates. The financial sector includes the banking sector, equity markets, external borrowings and remittances. The world wide financial crisis brought about 70 per cent fall in demand for Indian exports in its major market as its second channel of global financial crisis. Last, but not least, the rupee value came under pressure with the outflow of portfolio investments, higher foreign exchange demand by Indian entrepreneurs seeking to replace the external commercial borrowing by domestic financing, and consequent decline in foreign exchange reserves as its third sector.

Impact on Stock Market

The Stock Market activity was one of the principal activities in the corporate world among the chain of activities, which got affected due to the financial crisis. The stock market indices were one of the principal indicators of the economic activities. The movements of stock market indices present the future economic outlook. A falling stock index reflects the dampening of the investment climate while a rising stock index indicates more confidence and soundness of the economy. When the crisis affects the real activities, it affects the stock market, as profit expectation on financial investment would be lower. If financial investment would be affected, its impact would be felt on the real investment, as real investment would not increase. Once the real sector activity lowers that would affect the entire economy. The expedition of the investors' interest mainly works affecting both the financial and real investment in the economy.

RBI response to the Crisis

As the current global financial crisis showed clearly the liquidity risk can raise manifold during the crisis and can pose serious downside risk to macro economic and financial stability. The only controlling and regulatory authority which can reduce this crisis situation in India has done its part effectively by stressing the various relief measures with response to the crisis. CRR short down by a total of 250 paisa points and SLR requirements were released initially by 1% and subsequently an additional window of 0.5% points was introduced specifically to enable banks to draw funds for providing liquidity to mutual funds. Apart from these initiatives, RBI had imposed prudential limits on inter bank liabilities in relations to their net worth and provision for balance sheet items including derivatives which had been reviewed to strengthen capital requirements and lightening of regulation and supervision of NBFC.

Primary Reasons for the Limited Impact of the Financial Crisis

- The banks and financial Institutions in India did not invest in mortgage backed securities and credit default swaps that turned toxic when the housing bubble in the US collapsed.
- Our high foreign exchange reserve helped avoid panic when foreign investors left the country.
- Most companies were well-capitalized and had not over-borrowed and therefore were able to weather the crisis.
- Both public and private banks remain mostly unaffected and so there was no threat to the basic payment system of India requiring massive rescue missions common in US and other countries
- The government in response to the crisis also took some steps that undoubtedly blunted the effect of the crisis.
- RBI slashed main policy rates so that banks don't suffer from capital adequacy constraints and are able to expand credit availability and increase liquidity.
- With a decrease in Interest rates the value of rupee was allowed to fall from Rs.40 to Rs.52 to the dollar.
- The foreign borrowing rules for firms in Infrastructure and real estate sector were also eased and a 4% cut was made in excise duty.

Data Analysis and Methodology

The data and methodology adopted for drawing out the present study were underlined below.

Data Analysis:

The sample consists of daily average index prices from BSE, NSE NASDAQ and Dow Jones from January 1, 1999 to December 31, 2008. The daily price data of these four indices were obtained from various websites including Bombay Stock Exchanges, National Stock Exchanges and Yahoo finance. The State Bank of India fixes fixed rate and that fixed rate (6.5%) was taken as a proxy for risk free rate of return.

Methodology:

Various statistical tools like Mean-Variance analysis, Sharpe ratio and Maximum drawdown were employed in the study that facilitates to estimate the risk and return involved in the investment decisions which in turn estimates the impact of global financial crisis on Indian stock market. The brief outline of those statistical tools had been summarized here under:

Mean-Variance:

The Mean-Variance enables to estimate the return and risk factor involved in investment process. Some of the important terms are as follows:

Return: The rate of return is the single most important outcome of an investment. Return is the motivating force and the principal reward in the investment process and it is the key measure available to investors in comparing alternative investments. Return as a securities in the change in security price during a holding period. The present study has calculated the annualized rate of return on the market index by using the following formula.

$$R = \frac{P_{t+1} - P_t}{P_t}$$

Where,

R_i = Return on 'i' th scrips

P_t = Price of the share at time t

P_{t+1} = Price of the scrip's at the end of the holding period.

Risk: Risk is the uncertainty associated with future possible outcomes. Risk is composed of the demand that brings variations in return on income. The main force contributing to the risk are price and interest. It is the variability in expected returns. This variability is generally measured by using a statistical measure called Standard deviation'. This measure has been considered to measure 'total risk' in portfolio theory. The formula used is

$$\sigma_t^2 = \sum_{t=1}^{n} [(R_t - E(R_1))]^2$$

Where.

R_r = Actual Return during a holding period.

$E(R_i)$ = Expected Return or Average Return.

Sharpe Ratio: The sharpe ratio which is developed by Nobel laureate William F. Sharpe has been used to measure the performance of reward-to-risk. It provides insight in to the risk/reward scenario of a security or a portfolio. The Sharpe ratio measures excess investment return as a function of volatility. The premise of this ratio is that the investment or portfolio must return gains which are proportional to the risk that is being taken. It is generally accepted that a higher Sharpe ratio is a better investment.

Formula

$$\textit{Sharpe Ratio} = \frac{\textit{Expected portfolio Return - Risk free rate of Return}}{\textit{Standard Deviation of portfolio}}$$

Maximum Drawdown: It is one way to measure the riskiness of a mechanical investment program. Compared with other risk statistics, maximum Drawdown is particularly easy to interpret. It is simply the largest drawdown experienced by a strategy during the received time under study. It is an easy way to compare the investment riskiness of different Strategies.

Limitations

- One of the major limitations of the study was the length of the data period. i.e., the study was limited to ten years only. Generally twenty years data would be more appropriate to form the trend analysis.
- Secondly, the study was based on secondary sources. And hence, it suffers from all the

limitations of the secondary data.

- Finally, the study was restricted to the application of ratio analysis and correlation analysis only. And it would be more effective if some of the other advanced econometric tools have been used.

Analysis and Interpretation

The relationship between the return and its volatility as a proxy for risk has been considered as important topic in financial research. However, nature of their relationship clearly pictuarised mixed evidence in the nature of these relationships. The Performance of Sensex and Nifty were scrutinized and presented in the following Tables (Table 1 and Table 2). Some of the preliminary statistics tools were presented in Table 1, which shows the movements of daily average stock returns and standard deviation. Skewness and Kurtosis measures provide insights about the underlying statistical distribution of stock returns. It is evident that Skewness was negative and Kurtosis was positive for both Sensex and Nifty during the study period. There was also an evidence of excess skewness and Kurtosis relative to the normal distribution.

The Annualized Returns, Risk, Sharpe Ratio and Maximum Drawdown of Sensex and Nifty indices through the period January 1, 1999 to December 2008 were presented in Table-2. This clearly shows a mixed evidence of return for both Sensex and Nifty during the study period. The table depicted clearly that there was an increase in stock return during FY2003-FY2007 and the highest return was gained during the financial year 2003. During the Crisis period, the return was negative for both Sensex (-53.41) and Nifty (-52.70). Additionally, risk-adjusted performance Sharpe Ratio is also negative for both Sensex (-53.57) and Nifty (-52.88) respectively. The results also showed positive returns averaged approximately 18.61 and 19.56 per cent for the Sensex and Nifty with a volatility of 22.91 and 29.23 per cent. Overall, the analysed result during the study period showed positive returns.

Correlation proved to be one of the vital tools for analysing the stock returns. Since correlation of stock price indices could be elevated owing to the presence of an underlying time trend and the persistence of prices in level form, the unconditional correlation matrix was reported in Table 3. The table revealed highest positive correlation between Indian stock market and US stock market. Again, results on this study made an impact that US and Indian Stock Market have been strengthened during the study period. Cross correlation provide a preliminary indicator of equity integration, with positive correlation exhibited for the period of analysis, which showed that the markets were most closely linked with US market.

Findings and Suggestions

Findings

- The adoption of New Economic Policy routed our Capital Market more broad based with the starting of OCTEI, NSE etc. National Stock Exchange of India launched S&P CNX Nifty and CNX Junior Indices that make up 100 most liquid stocks in India. CNX Nifty is a diversified index of 50 stocks from 25 different economy sectors. In 1998, the National Stock Exchange of India launched its web-site and was the first exchange in India that started trading stock on the Internet in 2000. The NSE has also proved its leadership in the Indian financial market by gaining many awards such as 'Best IT Usage Award' by Computer Society in India. Owing to this, our financial markets were at forefront.
- The impact of Global Financial Crisis has been transmitted to the Indian economy through three distinct channels viz., Financial Sector, Exports and Foreign Exchanges. As for as the financial sector is concerned, A marked drop in the Foreign Institutional Investment by $12 billion from the stock market directly hit the Indian stock exchange. The sudden vanishing of financial credit mostly affected the small and medium enterprise sectors, infrastructural development projects and real estate. In respect of export sector, it is evidence that 70% steepest fall in export for the last two decades. Similarly, nearly 25% depreciation in the Rupee's exchange rate has partially resulted in sharp slowdown in world exports and result in widespread unemployment and social stress in major exporting economies.
- The Stock Market activity got affected due to financial crisis which in turn has greater effect on profit expectation among the investors. Stock Prices have fallen by 60%. India's stock market Index-SENSEX-touched above 21,000 mark

in the month of January, 2008 and has plunged below 10,000 during October 2008.

- RBI has implemented many remedial measures to overcome the crisis. Namely, reduction in CRR by 250 paise points and modification in SLR rate to suit the requirement are effective measures taken by RBI.
- Highest positive correlation between the Indian Stock Market and US Stock Market and an indication of equity integration with positive correlation exhibited for the period of analysis. The strong Influence of the US stock on the Indian stock market is expected, since the former is the largest stock market build upon the most influential economy in the world and the US is the most important trading partner and export destination for Indian goods and services.

Suggestions

The steps that would further strengthen the Indian Stock Market to reach its high morale among the investors are as under:

(i) The SEBI and the central government should make all positive efforts to boost the morale of the Indian investors to invest in the stock market quite often.

(ii) The government must have some strategic measures, so that it can withstand the crisis situation. Hence, our economy will not be affected badly.

Conclusions

In this paper, an attempt has been made to study the impact of Global Financial Crisis on Indian stock market and its integration of US stock market. For this, the study employs the data through the period January 1, 1999 to December 31, 2008 that has been collected from various websites including National Stock Exchanges, Bombay Stock Exchanges and several other websites. From the study, it was concluded that the Indian Stock market was affected by the Global financial crunches. The fear of the US financial crisis affecting Indian markets, but there was no panic as the capital market watchdog was monitoring the situation very closely. The Indian stock market was resilient and the clearing system has proved its ability to deal with stock market fluctuations. Financial stability in India has been achieved through perseverance of prudential policies which prevent in situations from excessive risk taking and financial markets from becoming extremely volatile and turbulent. India is facing now facing a challenge and it is not a new phenomenon for India as it has faced several challenges in the past and has overcome them. Our nation hence, has the strength to overcome the current challenges also.

Scope for Future Research

The slowdown in the economy of any country will definitely have great impact on financial sector. The extension of this paper is needed to examine further the impact of financial market towards real sector.

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Table 1: Descriptive Statistics

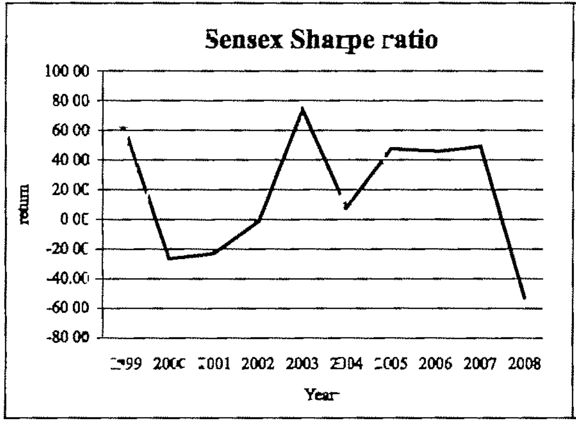
	SENSEX				NIFTY			
YEAR	**Mean**	**STDEV**	**Skew**	**Kurt**	**Mean**	**STDEV**	**Skew**	**Kurt**
1999	0.1922	1.5675	0.2511	0.9440	0.0020	0.0151	-0.0046	0.8606
2000	-0.0952	2.1162	-0.1017	1.0173	-0.0007	0.0164	0.0027	0.7641
2001	-0.0816	1.5707	-0.8550	3.2960	-0.0007	0.0133	-0.7441	2.6845
2002	0.0188	0.9001	-0.0919	0.2461	0.0002	0.0081	-0.1578	-0.0920
2003	0.2180	0.9346	-0.1676	0.3560	0.0021	0.0096	-0.3660	0.6992
2004	0.0477	1.2878	-2.4336	21.2076	0.0004	0.0133	-2.7274	25.8006
2005	0.1423	0.8717	-0.4595	0.4776	0.0012	0.0086	-0.5435	0.4898
2006	0.1580	1.3204	-0.6916	3.6275	0.0014	0.0135	-0.3497	8.5010
2007	0.1545	1.3670	-0.3388	1.7205	0.0017	0.0640	0.1627	16.6791
2008	-0.3026	2.5559	-0.2613	1.2429	-0.0030	0.0221	-0.7614	2.7588

Source: *www.bseindia.com;www.nseindia.com*

Table 2: Performance of Sensex and Nifty for 1999-2008

	SENSEX				NIFTY			
YEAR	RETURN	RISK	SR	MD	RETURN	RISK	SR	MD
1999	62.23	24.88	**61.97**	-14.61	67.10	23.98	**66.83**	#####
2000	-26.51	32.91	**-26.71**	-42.80	-15.76	26.11	**-16.01**	-36.83
2001	-22.84	24.84	**-23.10**	-41.53	-16.81	21.18	**-17.12**	-39.65
2002	-1.28	14.16	**-1.74**	-23.73	4.30	12.82	**3.79**	-22.57
2003	75.75	14.96	**75.31**	-13.87	68.38	15.25	**67.95**	-15.90
2004	7.99	20.30	**7.67**	-25.67	10.07	21.12	**9.76**	-27.95
2005	48.28	13.57	**47.81**	-11.86	35.32	13.69	**34.84**	-12.18
2006	46.02	21.05	**45.71**	-28.52	40.54	21.47	**40.24**	-29.35
2007	49.84	21.87	**49.55**	-14.98	55.18	101.67	**55.12**	-52.78
2008	-53.41	40.57	**-53.57**	-62.66	-52.70	35.01	**-52.88**	-62.30

Note: SR-Sharpe Ratio;MD-Maximum Drawdoun
Source: *www.bseindia.com;www.nseindia.com.*



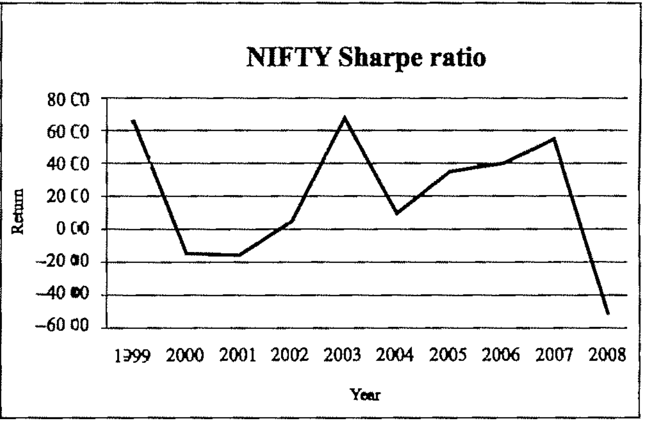


Table 3: Correlation Matrix

	Nifty	Sensex	Nasdaq	Dowjones
Nifty	1.00			
Sensex	0.844*	1.00		
Nasdaq	0.502*	0.504*	1.00	
Dowjones	0.496*	0.596*	0.702*	1.00

correlation is significant at the 0.01 level

Source: *www.bseindia.com; www.nseindia.com; www.yahoofinance.com*

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Validation of E-Commerce Portal Service Quality Scale in E-Government Portal

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Research on digital government focus mainly was hitherto on strategic implementation of government services, without an accountability of service quality expected by the users Good service quality helps in return users and thus can enhance the usage of e-government services Very few studies which have been done on e-government service quality Researchers generally adopt multidimensional scale proposed for e-commerce to measure the e-service quality of government projects But are the two comparable? An empirical research based on conceptual model in this paper highlights to what extent an e-commerce model can be implemented to evaluate the service quality of government digital services offered over the internet. The findings have been explained, which can serve as a valuable input for researchers and practitioners to understand user perceived service quality for e-government portals. The study was based on an Indian Government portal and might be a limitation for taking a holistic approach to address the issues existing in government portals of different countries.

Keywords: *Service Quality, Scale, Portals, E-government, E-Commerce*

Introduction

eGovernment is "the transformation of public sector internal and external relationships through net-enabled operations, information technology and communications, to optimize government service delivery, constituency participation and governance" (Baum, Di Maio, and Caldwell, 2000). eGovernment or electronic government today is quintessential of developed as well as developing economies to fight corruption and serve the citizens in a better way. The success of e-government projects significantly lies in the utility and usage pattern of the e-government services. Ubiquity of internet and wireless connectivity has made it easier for government organizations to deliver their services to citizens through government portals. More and more government projects are getting rolled out over information and communication technology (ICT) backbone, to facilitate citizens with efficient and effective system. With the inception of web 2.0, e-government applications are incorporating collaborative, integrated and citizen centric approach. Citizen centricity necessarily is empowering citizens where they can participate and interact, so service quality of the mode of delivery remains a prime factor for both; the service providers as well as for the users. Most of the past studies on service quality of e-government portals are exploratory and based on dimensions related to service quality of e-commerce scale (Eckenfelder, 2004; Wang et al., 2005 and Welch and Pandey, 2007).

The objective of this paper is to investigate the validity of a multi item scale (Yang et al., 2005) which was proposed to measure service quality for information portal used in e-commerce is applicable to evaluate service quality of government web portal. We have considered the most frequently used government portal in India, Indian Railways Catering and Tourism Corporation Limited (IRCTC) portal for this research work. We have examined each construct proposed in the multi item scale and compared it with the requirement of government portal. Since we found it applicable in the context of e-government (Table 2) a questionnaire was designed based on the items provided in the research paper of Yang et al., (2005) and survey was conducted based on it. The feedback from respondents was taken in 5 point Likert scales ranging between strongly agree and strongly disagree. A confirmatory factor analysis followed by multivariate regression was done to examine the model fit and relational coefficient of predictor variable on dependent variable. This paper has been divided into four sections. In the first section a theoretical overview of the role of portals in government has been explained. In the second section

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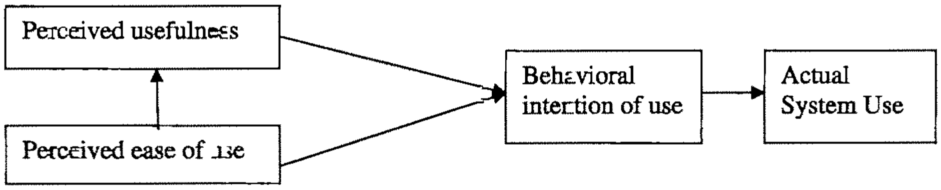
a literature review has been given to understand how different researcher tried to measure service quality in government portals. Many multi item scales have been proposed based on empirical studies which have been investigated in details so as to identify the appropriate scale for our research. Data analysis has been shown in the third section and the end section is conclusive with recommendation on future work.

Understanding Service Quality of Government Portals: A Literature Review

Despite its numerous benefits like increased public access to information and a more efficient, transparent and cost effective government use of e-government services depend upon the willingness of the citizens to adapt it. Ojha et al., (2008) while studying behavioural intention of youth in India to use paperless income tax filing stated that, it is not always feasible to mandate use of an e-government service targeted at citizens. In such situations government authorities need to understand the determinants of technology adoption by citizens and initiate appropriate managerial interventions. Gant et al., (2003) observed in an UK based survey that though government organizations try to develop sophisticated web portals yet fail to convey the sense of accountability. E-government managers need to be responsible for the quality of service they deliver through the portals and try to understand the need of the citizens. Improvement in accessibility to government authorities, confidentiality, information usability and technology acceptability can enhance the actual usage of e-services of government.

Adoption from Information Systems

Technology Acceptance Model (TAM) was given by Davis (1989) to understand what makes people accept or reject information technology. In the quest to justify people's intention of accepting information technology, Davis identified perceived usefulness (PU) and perceived ease of use (PEOU) influence web usage. TAM is the most widely applied model used to determine user acceptance and usage of web sites. Venkatesh (2000) used TAM as the base model to establish a relationship between PEOU and actual usage of a new system environment. The study was carried out in three different organizations and it was established that PEOU is system specific. System-specific PEOU can be determined by control (computer self efficacy), intrinsic motivation and emotion. Gefen et al., (2000) also argued that PEOU influences usage depending on the nature of task performed by the system. According to their study, for an IT intrinsic use, PEOU has a positive influence on acceptance of technology but in the usage where IT acts just as a facilitator, PEOU has little influence on acceptance. Heijden (2005) used TAM as a theoretical framework to explain the individual acceptance and usage of a website. In this study a conceptual model was given which introduced two new website constructs: “perceived entertainment value” and “perceived presentation attractiveness” as an extension of the TAM. Moon et al., (2001) while studying usage in a world-wide-web context extended TAM and introduced playfulness as a new factor which accounts for usage of www. Wang et al., (2003) used TAM as a conceptual framework to study internet banking and modified the model by introducing a new factor as ‘perceived credibility’.



(Source: Davis et al., 1989; Venkatesh, 2000)

Figure 1: Technology Acceptance Model

Yang et al., (2005) used the concept of this model to explain how service quality which is an influencing parameter to measure user satisfaction can depend on technology acceptance of the users. They also studied and had adapted from D&M Success model and tried to explain the PEOU and PU in light of the model.

The explanation of D& M IS success model has been given in the following section.

Another important study was the Information System (IS) Success Model given by DeLone and McLean, (1992). This model essentially explains the success factors of Information Systems. It was proposed as a process model which explained causality with the flow of the process. The purpose of this model was to assist researchers in the process of systematically combining individual measures from IS success categories and create comprehensive measurement instrument (DeLone and Mclean 1992).

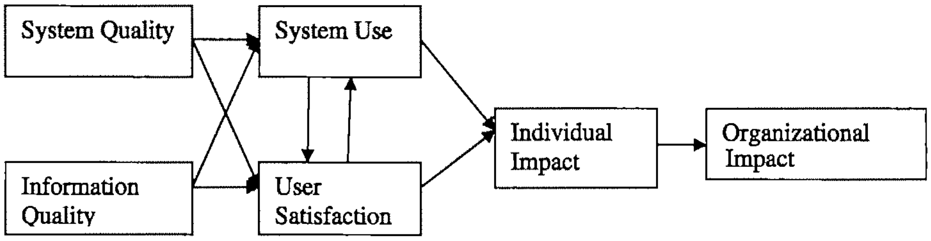


Figure 2: Adapted from D&M IS Success Model

Several empirical studies by researchers (Seddon and Kiew, 1996; Grover et al., 1996; Seddon, 1997; Garrity and Sanders, 1998) were based on D&M model to validate association of the IS success factors proposed. Since e-commerce involves exchange of information in the system of online environment, it can be considered as a type of Information System. Molla and Licker (2001) proposed an e-commerce success model based on the original D&M IS Success Model. With the proliferation of internet in commercial sector, e-commerce marked a dramatic growth which led to an update of D&M model in the 2003. In this revised model, DeLone and McLean tried to explain the success factors in the e-commerce context where the primary system users are customers or suppliers. The success factors 'System Quality' in the online environment was proposed to measure the desired characteristics of an e-commerce system like usability, reliability, adaptability, and availability etc. while 'Information Quality' can be used to capture web content in the context of e-commerce.

Government institutions use web portals for G2G, G2C and G2B communication. Therefore IS success factors proposed by D& M can be advertently used to explain the dynamics of online services offered to citizens and their impact on individual. Wang and Liao (2008) validated D&M IS success model in assessing e-government systems success.

Adoption from Management and Marketing Science

Gummenson (1979) played a pioneering role to suggest that the concept of service quality was related to perceptions and trust. Grönroos (1982) defined total service quality as a perception of customer and can be expressed as a difference between expected service and perceived service. Parasuraman et al., (1988) accorded to Grönroos' perception and developed a multidimensional service quality assessment tool, SERVQUAL. SERVQUAL was a successful tool and measured five dimensions: tangibility, responsiveness, reliability, assurance and empathy. Zeithaml, Parasuraman and Malhotra, 2000, 2002; Zeithaml, Rust and Lemon 2001 and later Parasuraman, Zeithaml and Malhotra (2005) carried out a study on internet service quality and developed the e-SQ scale, an extension of SERVQUAL.

This scale was proposed to measure the effectiveness and the efficiency of purchasing through a website. Initially, the e-SQ scale comprised two scales e-S-QUAL and e-RecS- QUAL having 11 dimensions in total. The dimensions were access, ease of navigation, efficiency, flexibility, reliability, personalization, security, responsiveness, assurance/trust, site aesthetics, and price knowledge. Later it was refined and reduced to seven dimensions. The specific purpose of both the scales was the measurement of website service quality.

Cox and Dale (2001) observed that traditional parameters do not define online service quality rather factors such as accessibility, communication, credibility, and appearance, are critical to the success of online businesses. They further statistically validated four crucial quality factors: ease of use; customer confidence; online resources and relationship services. Gefen (2002) suggested three dimensions: tangibility which ensured increased consumer loyalty; a combined dimension of responsiveness, reliability, and assurance associated with increased consumer trust; and empathy. Further study of service quality dimensions, excluded tangibility, and stated that assurance was associated with consumer agreement (Devaraj, Fan and Kohli, 2002).

Most of the studies in the early 2000 (Barnes and Vidgen, 2002; Madu and Madu, 2002; Wolfinbarger and Gilly, 2003) were empirical and based on surveys done for online service quality of e-commerce web sites. Kim et al., (2006) study was based on E-S-Qual scale. Table 1 summarises the important dimensions of the extant measuring instruments researchers have proposed:

Table 1: Important Dimensions of Measuring Instrument (Scales) Given By Different Eminent Researchers to Measure Service Quality of Websites/Portals

Dimension	Researcher Name
Information quality / Content usefulness	Liu and Arnett (2000); Loiacono, Watson and Goodhue (2002); Aladwani and Palvia (2002); Barnes and Vidgen (2002); Li, Tan and Xie (2002); Yang, Cai, Zhou and Zhou (2005).
Website Design	Liu and Arnett (2000); Loiacono, Watson and Goodhue (2002); van Riel, Liljander, and Jurriëns (2001) Wolfinbarger and Gilly (2001, 2002, 2003); Yoo and Donthu (2001); Aladwani and Palvia (2002)
Usability/Technical adequacy	Liu and Arnett (2000); van Riel, Liljander, and Jurriëns (2001); Yoo and Donthu (2001); Loiacono, Watson and Goodhue (2002); Barnes and Vidgen (2002), Wolfinbarger and Gilly (2001, 2002, 2003); Aladwani and Palvia (2002); Li, Tan and Xie (2002); Yang, Cai, Zhou, and Zhou (2005)
Interaction	Loiacono, Watson and Goodhue (2002); Barnes and Vidgen (2002); Li, Tan and Xie (2002); Yang, Cai, Zhou, and Zhou (2005).
Security & Privacy	Loiacono, Watson and Goodhue (2002); Liu and Arnett (2000); Wolfinbarger and Gilly (2001, 2002, 2003); Yoo and Donthu (2001)
Ease of use	Liu and Arnett (2000); Loiacono, Watson and Goodhue (2002); Li, Tan and Xie (2002); Yang, Cai, Zhou, and Zhou (2005); Yoo and Donthu (2001); van Riel, Liljander, and Jurriëns (2001).
Service	Liu and Arnett (2000); Wolfinbarger and Gilly (2001, 2002, 2003); van Riel, Liljander and Jurriëns (2001).

These dimensions satisfactorily justify the measurement of service quality of e-commerce sites or portals as the instruments were validated. Since e-commerce and e-government both involve online service environment, question remains whether the same dimensions successfully evaluate the effectiveness of e-government portals?

The applicability of traditional quality dimensions in e-commerce stand good to the extent government portals can justify the basic approach to service. Internet being a new technology which is used in the government service, acceptance of technology is very much a concern. Reddick (2005) while studying citizen interaction with e-government in America observed that, citizens who were able to get desired information over the Internet, had a positive outcome from using the Internet, often use government web sites.

Adoption of Previous Work in E-Government Studies

To define user perceived service quality of e-government portals we need to understand user expectation, issues which prevent citizens and other stakeholders from using e-government services and the factors which enhance user experiences with e-government services (Bertot, Jaegar and McClure, 2008).

Jun, Lianghang and Fubin (2009) used E-S-Qual in evaluating service quality of e-government web sites. The researchers had drawn an analogy of interaction of commercial sites and e-government sites and made subtle changes to encompass the service quality expected by citizens from a government site. The scale hence developed is a replica of E-S-Qual and E-Res-Qual befitting the requisition of e-government. Papadomichelaki and Mentzas (2009) conceptualised an e-government service quality model, e-GovQual where they proposed six factors: Ease of Use, Trust, Functionality of the interaction environment, Reliability, Content & Appearance of Information and Citizen Support (Interactivity).

Exploring users perception of G2C (government to citizen) services, Kanat and Ozkan (2009) proposed that, besides the influence of perceived usefulness (PU) and perceived ease of use (PEOU) on the attitude of using e-government services; citizens' trust on internet and e-government providing the service, citizens' skill of using advanced technology and accessibility to technology also influence the intention and behavioural attitude to avail government service online. In an UK based survey Jones et al., (2007) observed that the relationship between the public sector and citizens is critical for the success of e-government. So there is a need to gain customer involvement both prior and subsequent to e-government implementation.

Applicability of Web Portal Scale in E-Government Web Portal

Service provided by a government site or portal is different from a commercial site because of multiple reasons. Foremost the service offered is predominantly informative. Secondly the user category differs. Thirdly government authorities are hardly answerable to public even in big democracies. Last but not the least is that government site or portals rarely prioritize citizen feedback. Since citizen feedback system is underplayed the assessment of usage of e-government portal remains an issue.

As most of the government portals are designed to communicate information to citizens, we have tried to draw an analogy between an information portal, and e-government service portal.

Yang et al., (2005) developed a scale to assess the service quality of general e-commerce portal. The researchers used concept of TAM and D&M IS success factors to build the framework of the 'instrument' and successfully validated it with a data of a property developer's company web portal. They probed on aspects of 'usefulness' and 'ease of use' expected by users so that they can easily migrate from traditional channels to internet based operation and found that information and system quality provided by online environment are two major determinants of user perceived usefulness and ease of use. Two constructs, *usefulness of information* and *adequate information* were highlighted to define information quality and three constructs, *usability, accessibility* and *interactivity* represented system quality. An analogy of the five dimensions between a general or information portal and an e-government portal is given in the table below:

Table 2: Analogy between Properties and Purpose given for a Web Portal and for Government (IRCTC) Portal

Property	Purpose served for web portals	Purpose to be met in e-gov portal
a. Usefulness of information	Refers to value information, its reliability and accuracy along with relevance of the information to the user. Reliability necessarily means the consistency and dependability so information is expected to be updated and error free.	Refers to accurate, updated and reliable information which is useful to citizens.
b. Adequacy of information	Explains the completeness of information. Complete information for existing and potential customers and hyperlinks to relevant web portals should be provided.	Explains the completeness of information. Government web portals should provide hyperlinks to information sources for users so that they may avail e-government services.
c. Usability	Refers to user friendliness. Content layout, website structure, user interface web site appearance and visual design, clarity, search facilities greatly influence user visiting the site. Privacy of personal data provided and security are necessary criteria.	Content layout should be distinct to avail service to the maximum. User interface with multilingual facility (user friendliness), clarity and search facilities can enhance number of users. Privacy and confidentiality add to the security quality of the site.
d. Accessibility	It essentially refers to availability and responsiveness. All time availability of information along with speedy log-on, search and downloads.	24/7 availability of information along with speedy log-on, responsiveness and downloads.
e. Ease of interaction	Interaction can be between service providers and users, users and website or between peer users. Personalized services may be expected by users can add value to the web site service	Opinion poll and Complaint management system is good way to interact with customers.

Research

Data Collection and Sample Profile

Proposed scale of Yang et al., (2005) for an IP portal, which had five well defined constructs were suitable for e-government IP applications and could be used in assessment of e-government portal (Table 2). We used Delphi method to remodel the questionnaire and a survey was conducted for Indian Railways Catering and Tourism Corporation web portal. Demographic variables like age, sex and education level were included in the questionnaire to check up with the descriptive statistics. Responses from respondents were taken in a Likert scales of 1-5 ranging between strongly agree and strongly disagree. A sample size of 500 respondents was taken from the population of Delhi NCR region. Only 286 responses were complete and could be considered for analysis. It was observed 73% of respondents were between the ages 20 and 50 while 27% were below 20 years, 63% was male respondents while 37% were female. Since technical difficulties and learning effort pose obstacle in using web portal, people below college level rarely used the portal. Most of the respondents were minimum college going students or graduates. It was further observed that post graduate or professionally qualified respondents were 66% and graduate or below were 44%.

Data Analysis and Results

We used SPSS and AMOS to conduct the entire analysis. Reliability of the scale was determined by measuring Cronbach's alpha (α) and was found to be 0.839. Studies (Field, 2005) suggest that $0.7 \geq \alpha \leq 0.8$ is considered to be acceptable and value > 0.8 is considered to be appreciably good, which confirmed that the scale is reliable and can be used for our purpose. Since we were using a previously validated scale, we did not go for factor analysis. We wanted to check how well the scale justifies e-government service measure and hence performed confirmatory factor analysis using goodness of fit using AMOS 7.0. Convergent validity in this model was evaluated by measuring individual consistency i.e. factor loading of each item on a factor, while construct validity was measured by evaluating Composite reliability (CR) and Average Variance Extracted (AVE).We used the Online CONSTRUCT VALIDITY Calculator version (2.0) to evaluate CR and AVE.

Table 3: Construct wise Composite Reliability (CR) and Average Variance Extracted (AVE)

Construct	Items	Factor Loading	Composite Reliability	AVE
Usefulness	UI_1	0.698	0.425	0.295
	UI_2	0.646		
	UI_3	0.337		
	UI_4	0.405		
Adequacy	AD_1	0.442	0.516	0.416
	AD_2	0.759		
	AD_3	0.802		
	AD_4	0.705		
	AD_5	0.409		
Usability	US_1	0.464	0.401	0.267
	US_2	0.505		
	US_3	0.594		
	US_4	0.77		
	US_5	0.283		
	US_6	0.325		
Accessibility	ACC_1	0.795	0.757	0.728
	ACC_2	0.907		
Interactivity	ITR_1	0.436	0.56	0.483
	ITR_2	0.88		

According to Hair et al., 1998, threshold value of composite reliability is 0.7 and that of variance extracted is 0.5 (Fornell and Larcker, 1981). If we scrutinize the data in Table 3, we find that except accessibility none of the constructs show considerable validity. So we may conclude that the construct validity of this scale is not valid from e-government perspective. Evaluating goodness of fit indices is another method to assess the degree of congruence between model and data. Different goodness of fit index has been tabulated below in Table 4.

Table 4: Recommended Values of Different Goodness of Fit Indices and Results

Fit Index	Recommended Values	Results in the study
χ^2/df (chi square /degrees of freedom)	≤ 3.00	5.00
Goodness-of-fit index (GFI)	≥ 0.90	0.81
Adjusted goodness-of-fit index (AGFI)	≥ 0.80	0.744
Comparative fit index(CFI)	≥ 0.90	0.68
Tucker-Lewis Index (TLI)	≥ 0.95	0.61
Root mean square error of approximation (RMSEA)	≤ 0.10	.120

Marsh et al., (2004) disagreed on strictly adhering to recommended cut off values as it can lead to instances of Type I error (the incorrect rejection of an acceptable model) so though the indices obtained in the study did not show a very good model fit, yet we further proceeded with the study.

To understand how well the constructs (independent variables, IV) are related to service quality (dependent variable, DV) we performed a correlation and multiple regression analysis using SPSS 17. As Yang et al., (2005) scale has also tried to establish a relation between service quality and satisfaction of users; we tried to assess the effect too in our context.

Correlation measures the strength and direction of relationship. Table 5 shows a correlation matrix with Pearson r for individual construct.

Table 5: Relationship (correlation coefficients) of Independent variables with dependent variables: N=286

	r for SQ	p value for SQ	r for S	p value for S
Usefulness	.276**	.000	.328**	.000
Adequacy	.496**	.000	.432**	.000
Usability	.478**	.000	.362**	.000
Accessibility	.104	.079	.151*	.010
Interactivity	.417**	.000	.302**	.000

Although from p value ($p < 0.05$) it is visible that relationship exist between each construct (usefulness, usability, accessibility and interactivity) and service quality; each of these relationships is weak as $r < 0.3$ (Field, 2005). Adequacy has an r value of > 0.4 which says that this relationship is comparatively strong. Since a scale consists of five constructs we cannot take into account a single construct. So, this model again fails to explain the proper assessment of e-service quality of government organizations.

Regression predicts dependent variable from independent variable. So we examined the regression analysis which is tabulated in Table 6.

Table 6: Coefficients of Regression

Model	Un-standardized Coefficients		Standardized Coefficients	t	Sig.
	B	Std. Error	Beta		
Usefulness	-.027	.067	-.025	-.399	.690
Adequacy	.185	.040	.297	4.633	.000
Usability	.281	.068	.259	4.148	.000

Accessibility	-.061	.032	-.109	-1.951	.052
Interactivity	.160	.036	.238	4.403	.000

Usefulness and accessibility both the constructs (IV) show negative regression coefficients (B) and the values are statistically insignificant (>5% level of significance). The other IVs do have positive and significant influence but the association values are quite low indicating the relations to be weak. The results support our previous conclusion that the model is not good enough to assess government e-services.

The ANOVA table on the contrary shows a test statistic (F test value) of 30.419 and a p value (significant value) of .000 (at 5% level of significance) which indicates that the model is acceptable. This controversy can be explained as that the scale can be used as a basic framework for assessment of e-service quality, but need to be refined and few more constructs might be introduced to take care of citizen centricity and usability.

Regression was used to further understand the relationship between service quality and satisfaction of users (citizens) and was found to be significant with 43% of variance and a beta value of 0.658 at 5% significance level.

Conclusion and Recommendation

The research had two aspects, firstly whether at all the scale can be used to evaluate government portal and secondly to what extent the scale does justice to measure up service quality of a government portal. From the data analysis we have seen that the scale has essential constructs which can be used for measuring e-service, but in a very basic form. Only 34% of total variance of service quality can be explained by the scale. It can thus be concluded that the scale though was devised to measure the service quality of a general portal precisely an information portal (for Real estate) yet the same scale can also be used to evaluate the quality of service of an e-government portal to the extent in which there is no demarcation between government portal any other e-commerce portal. The scale does not have any dimension which is citizen centric like provision for multiple language, 24/7 availability, safe transaction, interoperability of different departments and opinion poll by citizen. As Siddique (2008) in studying e-government efforts in Malaysia states that in order to improve governance and service delivery further it is important that the agencies undertake regular evaluations to assess how the clients view their current levels of service in terms of speed, convenience and accessibility. Similarly such surveys should also seek to assess the service needs and expectations of citizens so that service delivery improvement can be done in government sites and portals.

The model fit data and the correlation data hardly support the applicability of the scale in the context of e-government quality assessment of portals. So, proposal of a new scale is recommended which can quantify service quality of government portals taking this e-commerce scale as the base and introducing new dimensions which are citizen centric as transition of e-government 1.0 to e-government 2.0, makes careful understanding of citizens' needs imperative before any scale is devised.

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Determinants of Corporate Dividend Policy

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This paper empirically analyzes the determinants of dividend payment for the top 50 companies in terms of market capitalization, listed in the National Stock Exchange An important aspect of the dividend policy of any corporate is the division of net current earnings after tax into dividend to be paid to shareholders and retaining the residual. Dividend declaration is a crucial decision, it influences the growth of the company through retained earnings as well as the market value of the equity shares where dividends appear to play an important role This paper makes an attempt in this direction with the objective of analyzing dividend policy and practices in respect of selected Indian corporates It seeks to determine the influence of the factors like net profits, liquidity and reserve position, share prices, investors' expectations, volume of sales, windfall gains etc on the dividend decisions of corporates This study analyses that the relationship with the factors and dividend decisions of the corporates is existant or not.

Keywords: *Dividend, Growth in Rate of Dividend, Reduction or Avoidance of Dividend, Stable Dividend, Dividend Determinants, Dividend Policy*

Introduction

The focus of dividend determinants has been widely studied. Still it remained as one of the most provocative subjects in corporate finance. During the last three decades, a series of empirical and theoretical works have been conducted and covered many facets of dividends; among them are effects of dividend payment on firm value, reasons for paying dividends, determinants of dividend policy, and dividend trends, among others. Even though the many theories and models put forth to explain the dividend phenomena, empirical indication is necessary to establish the practice of theoretical models. Such evidence as recognized through statistical tests would confirm the relevance of theories or dismiss them as mythologies. Dividends represent a distribution of the book surplus, accompanied by a distribution of assets, or by a change in the form of equities, or an increase in the liabilities of the corporation. Annual dividend and dividend policies are determined by the top management. But they have to take into consideration a number of factors in determining their dividend policies and variations therein. The dividend policy of a firm determines what proportion of earnings is paid to shareholders by way of dividends and what proportion is ploughed back in the firm for reinvestment purposes. An important aspect of the dividend policy of any company is the division of net earnings after tax into dividend to be paid to shareholders on the one hand and maintaining retained earnings on the other hand. It is a crucial policy decision; it influences growth of the company through retained earnings as well as the market value of its equity shares. While deciding about the determinants, one may consider investment in fixed and working capital as an important factor which may have direct bearing instead of affecting through net earnings, for instance, during the course of short-term, dividends may compete with investment requirements and in the long-run dividend payments may be increased to attract equity capital for financing expected investment.

Need for the Study

Several studies have shown that many factors are contributing increase or decrease in dividend distribution decisions. Dividend is the cost to the equity capital contributed by large shareholders. Large scale companies are not started with a single person, it is the contribution of several investors with a view to earn profit and divide the same as per their share of capital contributed. While deciding what amounts to pay as dividend is always motivated by variety of factors. Dividends represent a distribution of the book surplus, accompanied by a distribution of assets, or by a change in the form of equities, or an increase in the liabilities of the corporation. Annual dividend and dividend

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policies are determined by the top management. But they have to take into consideration a number of factors in determining their dividend policies and variations therein. The dividend policy of a firm determines what proportion of earnings is paid to shareholders by way of dividends and what proportion is ploughed back in the firm for reinvestment purposes. An important aspect of the dividend policy of any company is the division of net earnings after tax into dividend to be paid to shareholders on the one hand and maintaining retained earnings on the other hand It is a crucial policy decision it influences growth of the company through retained earnings as well as the market value of its equity shares. Dividend payment directly enhances the wealth of shareholders whereas retained earnings maximize the wealth of company. The entire wealth of company is belongs to shareholders, but the shareholders are highly anticipating dividend rather than wealth maximization. Therefore, a study on determinants of dividend policy will be a relevant decision in view of this phenomenon.

Literature Review

In literature review, the paper presents a few basic areas of dividend research. First, it briefly discusses a few findings concerning dividend trends. Second, it will discuss the determinants of dividend policy, specifically the study by Lintner (1956), and company characteristics such as profitability and liquidity. Fama and French (2001) analyzed the dividend trend; in this study found that the percentage of dividend paying firms in the United States of America fell from 67 percent of listed firms in 1978 to 21 percent in 1999. Ferris, Sen and Yui (2005) documented similar findings in the England market, a market that is similar to that of the USA in terms of breadth and maturity. Their findings showed that the number of dividend paying firms in the England declines over the sample period and is most pronounced for the last five years of their analysis. At the beginning of the sample period, nearly 76 percent of England firms paid 6 dividends, but by 2002, only 54.5 percent of the sample firms pay dividends. They also found a similar decline from 60.2 percent to 23.6 percent for newly listed firms in the England.

Another study by Norhayati (2005) documented a similar pattern in emerging market, in her study of companies in Malaysia; however, the pattern appeared to relate very much to the economic cycle. Her sample excluded companies in the Finance and Unit Trusts sectors and was limited only to final dividend announcements. The findings of this study exhibited one decade from years 1981, the percentage of firms that paid dividends went down from 75 percent to 63 percent, however, the percentage of dividend paying companies increased to 83 percent in 1992 and continued to increase up until 1997, and went on a downward trend from that year where there were only 55 percent final dividend payers in year 2000. Please be noted that Malaysia experienced two economic downturns in the sample years, one in 1987 and the other in 1997. And the downward trend in dividends coincides with the years before the economic downturn and later picked up after the economy recovered. Many theories and models have been put forth to examine the numerous facets of dividend study.

Pruitt and Gitman (1991) find that risk determines the firm's dividend policy. A firm that has relatively stable earnings is often able to predict approximately what its future earning will be. Such a firm is more likely to pay a higher percentage of its earnings than firm with fluctuating earnings. The important article by Miller and Modigliani (1961) is probably the watershed in the theoretical modeling of dividends, which first proposed dividend irrelevance. On the other hand, theories which support dividend relevance include tax preference, signaling, and agency explanations. Other researchers have developed and empirically tested various models to explain dividend behavior. Some conducted surveys of corporate managers to learn the most important determinants of corporate dividend activity. Fama and French (2001) found that frequent dividend payers and non-payers differ in terms of profitability, investment opportunities, and size. Dividend payers tend to be large, profitable firms with earnings on the order of investment outlays. Firms that have never paid are smaller and they seem to be less profitable than dividend payers, but they have more investment opportunities, and their investment outlays are much larger than their earnings. The salient characteristics of former dividend payers are low earnings and few investments.

Objectives

This study makes an attempt in this direction with the following objectives:

(i) Analyzing dividend policy and practices in respect of selected companies in India.

(ii) It seeks to determine the influencing factors on dividend decisions.

(iii) It attempts to establish relative importance of factors that govern the decision to increase, reduce or avoid dividend payment.

Methodology

Sample and Data

A sample 50 companies listed in National Stock Exchange with a track record of paying dividend consecutively for the period of five years – starting from 2004-05 to 2008-09 - have been considered for this study. Totally 8 industries engaged in various fields selected with a market capital base of more than 1000 millions INR. The break up of the companies are, 10 each from automobiles and banking companies, 5 each from cellular providers, software, cement, infrastructure, sugar and textile industries. In order to get personal opinion from the top management, questionnaire was mailed and regular follow up helped to get the desired data. Of the 50 companies surveyed, 25 companies engaged in the service based business and remaining 25 companies belongs to manufacturing field having diversified activities and dealing more than 5 to 20 product categories. While inspecting the fundamentals, orders from the clients, customer base, and financial position of all companies are extremely strong. Relatively, the market share of products of both categories varied from 12% to 85%. Some banking companies having business presence across the world and established before independence.

Selection of Sample and Testing Procedure

The selection of sample has primarily been guided by two factors, speedy and reliable response from the top management, and availability of dividend announcement for the sample period. Initially 120 companies selected for this study but poor and delayed response leads for rejection of nearly 70 companies. Fortunately or unfortunately 25 companies from service based industry and manufacturing based industry selected finally. According to management discretion the factors are, described in the growth in rate of dividend, reduction or avoidance of dividend and other little impact factors tabulated. Then the factors are analyzed with due diligence. In order to test its worthiness of data collected, the Kendall's Coefficient of Concordance is employed to test the hypothesis framed. This section formulates three hypotheses to further examine the factors, which may affect corporate dividend policy. Considering all factors connected with growth and reduction or avoidance in dividend determinants, the following null hypothesis can be formulated:

Ho: There is significance difference in ranking by the different managements.

Dividend decision is also supported by a large number of unforeseen factors, the likely factors separate checked with the following hypothesis.

Ho: There is significant difference in opinion of management as to other different considerations

Principles Underlying Dividend Decisions

There are various principles underlying the policies of dividend listed below:

Nature of Industry: The nature of the business has an important impact upon its dividend policy. Industries that are characterized by stability of earnings may formulate a more consistent policy as to dividends than those having an uneven flow of income. Some industries offer great profit potential to the shareholders. Industries with high profit potential, often declares high dividend to their shareholders.

Age of the Company: The age of the company has a major influence on the dividend decisions. Newly established companies require much of their earnings for their improvement and expansion, while comparing with established companies having long track record can formulate clear-cut dividend programme and may even be liberal in the distribution of earnings.

Funds Requirement: Funds requirement is the most important factor for the dividend payout of a firm. This may be assessed with the help of financial forecasts prepared in the context of long term planning. Generally, companies have substantial opportunities and consequently considerable funding needs tend to keep their payout ratio rather low to conserve resources for growth.

Liquidity: Dividend paid in the form of cash or securities. Hence, the liquidity position of the firm has a bearing on its dividend decision. If any company faces liquidity crunches that firm unable distribute more dividends to their shareholders.

Additional Capital Requirement: The companies preserve a part of their earnings for amplification their financial position. The extent to which the profits are ploughed back into the business has got a conditioning influence on the dividend policy. The income may be conserved for meeting the increased requirement of working capital or of future expansion.

Government Policies: The policies in the fiscal, industrial, labor, pollution and other socio-economic policies will affect the rate of dividend. Sometimes government limits the rate of dividend declared by concerns in a particular industry or in all the spheres of business activity.

Taxation Effect: Dividend income is exempted upto a certain limit, which is prescribed by the Government from time to time. High taxation is said to be the cause of lowering the earnings of the corporations and, consequently, their rates of dividend. Some recent studies have shown that the rates of dividend may not be affected by high rates of taxes and the rates of dividend move in similar directions to show that the dividend distribution was not adversely affected by the alleged high rates of taxes

Stability of Dividends: The shareholders generally prefer stable dividends than fluctuating one. The term stability of dividends means consistency or lack of variability in the stream of dividend payments. To be more precise, it means regular payment of a certain minimum amount as dividend. The stability of the dividend can be in any of the following forms, constant dividend per share, constant percentage and stable rupee dividend plus extra dividend. Under the first form, a company may pay a fixed amount on the face value of its share. This amount is paid irrespective of the level of earnings of the company year after year. The second form involves the practice of a consistent pay out ratio, in other words, a certain percentage of the net earnings is paid by way of dividend to shareholders year after year. Then under the final form, the firm usually pays fixed dividend per share to the shareholders. However, in periods of market prosperity, additional or extra dividend is paid over and above the regular dividend. This extra dividend is cut by the firm as soon as the normal conditions return.

Determinants of Dividend Decisions

Growth in the rate of Dividend

If the dividend of the company grows year to year is termed as growth in dividend. Under Table1, the response of companies in different industries with regard to factor that they take into account while increasing the rate of dividend. 10 factors listed below in the table have been analyzed.

Table 1: Industry - wise Break Up of Companies in Respect of Growth in Dividend Rate

S. N	Factor	Service based				Manufacturing based				Total
		Banking	Cellular	Infra- structure	Software	Auto- mobile	Textile	Sugar	Cement	
1.	Growth in Net Profit	[illegible]	5	5	4	9	4	3	4	42
2.	Growth in Sales	[illegible]	4	4	4	7	4	3	3	37
3.	Enhanced Liquidity position	5	3	3	2	7	3	2	2	27

4.	Huge Reserves	5	2	2	2	3	1	2	1	18
5.	Raising funds from the capital market	1	-	-	-	-	1	1	-	3
6.	Non-Business Revenue	-	-	-	1	1	-	-	-	2
7.	Wind fall Profit	1	-	1	-	-	1	-	-	3
8.	Tax Reductions & Concessions	-	-	1	-	-	-	-	-	1
9.	Government Regulations to pay high dividend	1	-	-	-	-	-	-	-	1
10	Desire of shareholders to get Dividend	2	1	-	1	1	1	-	-	6
11	Other Factors	-	-	-	-	-	-	-	-	-

Source: Primary Data

It can be seen from the above table that growth in net profit is the most important factor responsible for paying increased rate of dividend to its shareholders. This is borne out by the fact that 42 out of 50 companies took this factor into account while increasing that amount of dividend. Then the growth in sales placed next, while deciding increased rate of dividend. It is strongly agreed by 37 companies paying increased dividend because of growth in sales. Next to that, enhanced liquidity position, 27 companies considering this into account at the time of increasing the rate of dividend. The change in liquidity position directly affects the financial soundness of the firm. In order to pay dividend at a constant growth , the companies are retaining funds for distributing dividends. According to 18 companies report, they are paying dividend because of huge reserve position along with the growth in sales, growth in net proft and enhanced liquidity postion. When having look on the industry wise response of companies, the same pattern of relative importance is evident from the above table. Generally, in all the industries under study, the managements take into account the increae in net profits followed by growth in sales, enhance liquidity and huge reserves position of the company at the time taking a decision to increase the rate of dividend.

The present study attempts to examine, if any other factors have impact on paying increased rate of dividend. While examining this, raising fund from the capital market is also considered at the time of facing financial crises by the management to pay dividend. In rare occasions, the companies used to pay increased dividend by utilizing funds obtained from the further issue of equity shares or debt instruments. Similarly wind fall profits, too, have little bearing on the dividend distribution decisions. Three companies from the entire sample list revealed that windfall profits led to a decision to increase the rate of dividend. Some companies from banking, cellular, software, automobile and textile industry expressed that they compelled to pay increased the rate of dividend at a fixed percent every year in order to satisfy their shareholders. While convening the annual general meeting, the shareholders are insisted the management to pay increased rate of dividend to protect them from inflation risk. Then all the other factors like non-business revenue, tax reductions and concessions and Government regulations to pay high dividend insist the management to pay incresed dividend in rare occasions. This is to someextent surprising a company would normally increase the rate of dividend only when its management is confident of a permanent increase in its paying capacity.

Reduction or Avoidance of Dividend

Many occasions, companies are not able to pay constant dividend or increased dividend over a period of time. Even the shareholders are paid lowest dividend than the dividend declared and paid during the depression time. If company not able to earn much profit or profit canalized to other development activities, the shareholders are not have their dividend.

To a question as to what factors affect the company decision to reduce the rate of dividend or avoidance of dividend payment, the management responded in the following manner. They were asked to state which of the following ten factors (given in Table 2 below) are considered by them at the time of reducing or avoiding dividend payment to its shareholders.

Table 2: Industry Wise Break Up of Companies in Respect of Reduction or Avoidance of Dividend

S. No	Factor	Service based				Manufacturing based				Total
		Banking	Cellular	Infra-	Software	Auto- mobile	Textile	Sugar	Cement	
1.	Decline in Net Profit or Loss	9	5	4	4	8	5	4	5	44
2.	Decline in Sales	6	4	3	3	6	4	3	3	32
3.	Lack of Liquidity	4	2	3	3	6	3	2	1	24
4.	Inadequate Reserves	4	1	2	1	4	1	1	1	15
5.	Loss of Funds towards R&D	-	1	1	1	2	-	-	-	6
6.	Undertaking new projects	-	1	1	1	-	1	-	1	6
7.	To retain huge earnings for development	2	1	1	1	1	-	-	-	6
8.	Accumulation of Tax burdens	-	-	1	-	1	-	-	-	2
9.	Government Restrictions (Sebi, FM etc)	1	-	-	-	-	-	-	-	1
10	Desire of shareholders to get Capital Growth	1	-	-	-	1	-	1	-	3
11	Other Factors	-	-	-	-	-	-	-	-	-

Source: Primary Data

It is evident from the above table, 44 out of 50 companies expressed, the reduced rate of dividend or avoidance of dividend payment resulted whenever there is a decline in the net profit or whenever there is a loss in business. While checking with the second one, that is decline in sales, 32 companies took this decision after taking into account at time of making dividend decisions. Lack of liquidity also hurts the shareholders income in many occasions. Almost 50 per cent of company's management agreed this point. It is thus, next in importance to the decline in sales and net profit as a factor responsible for avoiding or declining the rate of dividend. In the case of 15 companies, inadequate reserves also influencing the decisions as to paying reduced dividend or avoiding dividend. Next to the aforesaid, the loss of funds towards research and development, undertaking new projects and retaining huge earnings for developmental activities as a key factor in declaring dividend. Because of these factors 6 companies suffered when making dividend decisions. The industry wise response of the companies is similar to that of aggregative response of all the companies discussed above. In all the companies bifurcated into two types, suffered because of the decline in net profit or loss occurred in most occasions. Accumulation of tax burdens affecting the dividend decisions while deciding the rate of dividend. In a surprise, in order to meet capital adequacy norms, the banking companies are advised to pay lower dividend in some times. The dividend decisions are generally taken by getting approval from the AGM, if the shareholders want capital appreciation, reduced dividend is distributed.

Other Considerations in Dividend Policy

Along with the various determinants of dividend decision as discussed in 5.1 and 5.2, there is some other little impact or less important factors that may have a bearing on the appropriation of net profit between dividend and retained earnings. This factors may cause for increase or decrease in the payment of dividends. In this study, an attempt was made to determine the relative importance of some of these factors by asking the companies to evaluate them in an order of their importance. The response of companies is summarized in the table given below.

Table 3: Other Considerations in Dividend Policy

S. No	Factor	Service based				Manufacturing based				Total
		Banking	Cellular	Infra- structure	Software	Auto- mobile	Textile	Sugar	Cement	
1.	Reconstruction / Expansion Plans	2	2	1	1	3	1	-	1	11
2.	Mergers and Acquisitions	3	2	-	1	1	-	-	-	7
3.	Capital expenditure & Bonus shares issue	-	-	1	-	2	-	-	-	3
4.	Accumulation of internal sources	1	-	-	-	-	1	-	-	2
5.	Cost of Debt	2	-	-	-	-	-	1	-	3
6.	To enhance net assets	-	-	1	-	-	-	-	-	1
7	To suit market price of shares	1	-	-	1	-	-	-	1	3
8.	To avail special concessions	-	-	1	-	-	-	-	-	1
9.	Non-business expenditure load	-	-	-	1	-	-	-	-	1
10	Promoters desire	-	-	-	-	-	1	1	-	2
11	Other Factors	-	-	-	-	-	-	-	-	-

Source: Primary data

It is clear from the above table, the reconstruction and expansion requirements are the most important of these ten factors listed. Among the 50 companies, 11 company's management alters their dividend decisions because of expansion or reconstruction of their business. Next to this point, merger and acquisition plans influencing the dividend distribution decision. Then all the other factors like capital expenditure and bonus shares issue, accumulation internal sources, cost of debt, enhance net assets, to suit market price of shares, to avail special concessions, non-business expenditure and promoters desire have little impact while deciding the rate of dividend.

Testing of Hypothesis

Kendall's coefficient of concordance is adopted to test the validity of the data collected and analyzed. Kendall's coefficient of concordance, represented by the symbol *W*, is an important nonparametric measure of relationship. It is used for determining the degree of association among several (*k*) sets of ranking of *N* object or factors. When the ranking or *N* objects or factors exceed two set, we generally work out Kendall's coefficient instead of Spearman's coefficientcorrelation. Kendall's method is considered an appropriate measure of studying the degree of association among three or more sets of rankings. This descriptive measure of the agreement has special applications in providing a standard method of ordering objects according to consensus when we do not have an objective order of the objects. The procedure for computing and interpreting Kendall's coefficient concordance (*W*) is as follows:

- All the object, N, should be ranked by all k managements (companies) in the usual fashion and this information my be put in the form of a k by N matrix;
- For each object determine the sum of ranks (R_j) assigned by all the k managements.
- Determine □ and then obtain the value of s as follows: $s = \Sigma(R_j - \square_j)^2$
- Work out the value of W using the following formula: $W = s / 1/12k^2 (N^3 - N)$
- If N is 7 or smaller Kendall's table adopted, if N exceeds 7, then χ^2 value to be worked out as: $\chi^2 = k (N-1).W$ with degrees of freedom = (N – 1) for judging W's significance at a given level in the usual way of using χ^2 values.

Where

$s = \Sigma (R_j - \square_j)^2$

k = no. of sets of ranking (Industries i.e. companies list)

N = number of objects or factors (10 factors listed in Table 1 to 3)

$1/12k^2 (N^3 - N)$ = maximum possible sum of the squared deviations i.e. the sum *s* which would occur with perfect agreement among *k* rankings.

Dividend Determinants - Growth in Rate of Dividend

There are eight sets of rankings used to work out the coefficient of concordance for judging the significant difference in ranking by different managements. For checking this inference, the null hypothesis states there is significance difference in ranking by the different managements as to increase in rate of dividend. For testing the worth of hypothesis, industry wise the factors are ranked as per the top management discretion. When tied ranks occur, the average method of assigning ranks be adopted, that is, assign to each factor the average rank which the tied observations occupy. For this study, the factors noted under growth in rate of dividend i.e. Table 1, for easy way to understand, the factors are numbered from 1 to 10 and provided in the following matrix.

Table 4: Analysis of Dividend Determinants - Growth in Rate of Dividend

k = 3	Factors										N = 10
	1	2	3	4	5	6	7	8	9	10	
Banking	1.5	1.5	3.5	3.5	7	0	7	0	7	5	
Cellular	1	2	3	4	0	0	0	0	0	5	
Infrastructure	1	2	3	4	0	0	5.5	5.5	0	0	
Software	1.5	1.5	3.5	3.5	0	4.5	0	0	0	4.5	

Automobile	1	2.5	2.5	4	0	5.5	0	0	0	5.5	
Textiles	1.5	1.5	3	5.5	5.5	0	5.5	0	0	5.5	
Sugar	1.5	1.5	3.5	3.5	5	0	0	0	0	0	
Cement	1	2	3	4	0	0	0	0	0	0	
Sum of ranks (R_j)	10	14.5	25	32	17.5	10	18	5.5	7	20.5	**$\Sigma R_j = 160$**
(R_j - □$_j$)^2	100	210.25	625	1024	306.25	100	324	30.25	49	420.25	**s = 3189**

□$_j$ = ΣR_j / N = 160 / 10 = 16

s = 3189

W = s / 1/12k^2 (N^3 – N)

= 3189 / 1/12(8^2) (10^3 -10) = 3189 / 64/12(990)

= 3189 / 5280

= 0.604

As N is larger than 7, χ^2 worked out to determine the W's significance at 5% level.

χ^2 = k (N – 1).W with N – 1 degrees of freedom

= 8 (10 – 1) (0.604)

= 43.488

The table value of χ^2 at 5% level for N – 1 = 10 – 1 = 9 degrees of freedom is 16.919. Calculated value is 43.488, this is considerably higher than the table value. This does not support the null hypothesis of there is significance difference in ranking by the different managements as to increase in rate of dividend and as such it is inferred that W is significant at 5% level

Dividend Determinants - Reduction in Dividend and Avoidance of Dividend

The same testing procedure employed for reduction in the rate of dividend or avoidance of dividend payments. Here the null hypothesis states there is significant difference in ranking by the different managements as to decrease in or avoidance of dividend.

Table 5: Analysis of Dividend Determinants - Reduction or Avoidance of Dividend

k = 8	**Factors**										**N = 10**
	1	**2**	**3**	**4**	**5**	**6**	**7**	**8**	**9**	**10**	
Banking	1	2	3.5	3.5	0	0	5	0	6.5	6.5	
Cellular	1	2	3	5.5	5.5	5.5	5.5	0	0	0	
Infrastructure	1	2.5	2.5	4	6.5	6.5	6.5	6.5	0	0	
Software	1	2.5	2.5	5.5	5.5	5.5	5.5	0	0	0	
Automobile	1	2.5	2.5	4	5	7.5	7.5	7.5	0	7.5	
Textiles	1	2	3	4.5	0	4.5	0	0	0	0	

Sugar	1	2	3	4.5	0	0	0	0	0	4.5	
Cement	1	2	4	4	0	4	0	0	0	0	
Sum of ranks (R_j)	8	17.5	24	35.5	22.5	29.5	25	14	6.5	18.5	**$\Sigma R_j = 201$**
$(R_j - \bar{R}_j)^2$	64	306.25	576	1260.25	506.25	870.25	625	196	42.25	342.25	**s = 4788.5**

$\bar{R}_j = \Sigma R_j / N = 201 / 10 = 20.1$

s = 4788.5

$W = s / 1/12k^2 (N^3 - N)$

$= 4788.5 / 1/12(8^2) (10^3 - 10) = 4788.5 / 64/12(990)$

$= 4788.5 / 5280$

$= 0.9069$

As N is larger than 7, χ^2 worked out to determine the W's significance at 5% level.

$\chi^2 = k (N - 1).W$ with N – 1 degrees of freedom

$= 8 (10 - 1) (0.9069)$

$= 65.295$

The table value of χ^2 at 5% level for N – 1 = 10 – 1 = 9 degrees of freedom is 16.919. Calculated value is 65.296, this is considerably higher than the table value. This does not hold the null hypothesis of there is significance difference in ranking by the different managements as to decrease in or avoidance of dividend and as such it is inferred that W is significant at 5% level. Here almost high rank is assigned to factor 1, it indicates clearly, reduction or skipping over of dividend is caused because of decline in net profit or no profit i.e. loss.

Dividend Determinants - Test of Other Considerations in Dividend Policy

Often dividend decision is backed by lot of reasons other than the factors discussed in Table 1 and Table 2. The possible factors drawn separately and opinion from the management of all companies obtained. In order to test it worthiness, the null hypothesis states there is significant difference in opinion of management as to other different considerations.

Table 6: Analysis of Dividend Determinants - Test of Other Considerations

k = 8	**Factors**										**N = 10**
	1	**2**	**3**	**4**	**5**	**6**	**7**	**8**	**9**	**10**	
Banking	2.5	1	0	4.5	2.5	0	4.5	0	0	0	
Cellular	1.5	1.5	0	0	0	0	0	0	0	0	
Infrastructure	2.5	0	2.5	0	0	2.5	0	2.5	0	0	
Software	2.5	2.5	0	0	0	0	2.5	0	2.5	0	
Automobile	1	3	2	0	0	0	0	0	0	0	

Textiles	2	0	0	2	0	0	0	0	0	2	
Sugar	0	0	0	0	1.5	0	0	0	0	1.5	
Cement	1.5	0	0	0	0	0	1.5	0	0	0	
Sum of ranks (R_j)	13.5	8	4.5	6.5	4	2.5	8.5	2.5	2.5	3.5	**$\Sigma R_j = 56$**
$(R_j - \square_j)^2$	182.25	64	20.25	42.25	16	6.25	72.25	6.25	6.25	12.25	**S = 428**

$\square_j = \Sigma R_j / N = 56 / 10 = 5.6$

$s = 428$

$W = s / 1/12k^2 (N^3 - N)$

$= 428 / 1/12 (8^2) (10^3 - 10) = 428 / 64/12(990)$

$= 428 / 5280$

$= 0.081$

As N is larger than 7, χ^2 worked out to determine the W's significance at 5% level.

$\chi^2 = k (N - 1).W$ with N – 1 degrees of freedom

$= 8 (10 - 1) (0.081)$

$= 5.832$

The table value of χ^2 at 5% level for N – 1 = 10 – 1 = 9 degrees of freedom is 16.919. Calculated value is 5.832, this is considerably lower than the table value. Cleary this support the null hypothesis, there is significant difference in opinion of management as to other different considerations in dividend decisions.

Conclusion

This study examines the determinants of dividend declarations of listed companies in National Stock Exchange. The period undertaken for study i.e. from 2004-05 to 2008-09 covers both recessionary and booming phase of Indian industries. Although the information hypothesis for the determinants of dividend policy has strong intuitive appeal, it is supported by the analysis here using different factors. While increasing the rate of dividend, the factors taken into account, in order of their importance, were growth in net profit, growth in sales, enhance liquidity position and huge reserves. On the other side, the reduction in the rate of dividend or dividend avoidance is done whenever net profits declined or loss occurred. Decline in sales, poor liquidity position and inadequate reserves resulted to decline the rate of dividend. In precise, while analyzing all the factors, the first four factors that is, net profit, sales, liquidity and reserve position having big impact on the payment of dividend decisions. Then all the other factors affect dividend decision from time to time but not all occasions. Among the other considerations, reconstruction and expansion along with mergers and acquisitions considered to be an important consideration affecting the dividend decisions.

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Customer Perception of Banking Services - A Comparative Study of Rural and Urban Branches

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Banking services are regarded as one of the important services Banks provide financial services to the customers. Due to the rising competition and liberalization the banking industry has become the buyer's market Banks need to create and develop the services which can satisfy the consumer needs Customer satisfaction is a very important construct in today's market and it is directly influenced by service quality as per earlier studies Therefore, the present research work has been carried out to analyze the customer perception of service quality in rural and urban bank branches and its impact on customer satisfaction. The study identifies six service quality factors which influence customer satisfaction regarding banking services and it is revealed by the analysis that satisfaction level of rural customers is higher as compared to urban customers.

***Keywords:** Banks, Banking Services, Service Quality, Customer Satisfaction*

Introduction

Banking services are renowned as one of the important services. Banks provide financial services to the customers. Banks have greater responsibility of safeguarding the personal or corporate funds and providing advisory services on financial matters. Therefore, a bank should discharge its responsibilities carefully as a failure to discharge its responsibilities may affect the future of its customer. Secondly, the banks should perform the services in the interest of society and nation. Due to the increasing competition and liberalization, the banking industry has become the buyer's market. Therefore, banks need to create and develop the services which can satisfy the consumer needs. Customer satisfaction is very important construct in today's market. An organisation cannot survive in the long run if its customers are not satisfied. Therefore, it is the utmost duty of an organisation to safeguard his interests and meet his expectations with the product/service offered.

Customer perception of service quality is concerned with the judgment and attitude of the customer towards quality of the service after availing the same and in turn this perception decides whether the service was able to satisfy him or not. If he expects a certain level of a service and he actually perceives that service has provided more than what he expected then he will be satisfied and if he perceives it to be less than his expectation then he will be dissatisfied. Therefore, customer satisfaction is the summation of customer's all expressions of service quality and depends upon his own perception and expectations. Service quality is the competence of a product or service to carry out its specified tasks (Ennew et al., 1993). If there is some improvement in service quality, customer satisfaction also increases and vice-versa and hence service quality is the gap between customers's expectations of service and his perception of service experienced (Parasuraman et al., 1985).

In today's world of liberalization and deregulation, banks are continuously forced to find out new ways to take an advantage over their competitors to reach out to new customers and retain them through innovative and sophisticated products and services. Therefore, customer satisfaction is of utmost importance for the survival and growth of financial institutions. The growth of these institutions depends upon their ability to create or attract new customers and retention of satisfied customers leads to their survival in the long run. In order to be successful, banks today are competing with each other to satisfy their customers and thus to attract and retain loyal customers which ultimately helps banks to earn higher profits in future (Arora, 2005). The banks have started introducing innovative and electronic services such as ATMs, Internet banking, Telebanking, etc. selectively in metros, then extended to cities, towns and finally to

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the villages. In other words, the commercial banks are putting their best efforts to diversify all banking services i.e. from traditional commercial banking services to the modern retail banking services to every nook and corner of the country. But the question arises whether rural bank customers are getting the same range and level of the services as being enjoyed by urban customers? To substantiate, in urban areas, customers have more choice as they can switch to other banks if they don't get the services as per their expectations. But in rural areas, usually there is only one bank branch (two at the maximum) and they have to stick to the same for the services to be availed. Therefore differences may persist in the perception of rural and urban customers. Moreover, lower literacy rate in rural areas also contributes towards dissimilar customers' perception of banking services. Therefore, the primary objective of the present study is to analyse, comparatively, the perception of rural and urban banks customers regarding the services banks provide. And its specific objectives are to identify the key factors of service quality as perceived by bank customers and to study the impact of these factors on overall customer satisfaction.

Literature Review

Researchers have conducted a number of studies at national as well as international level to measure customer satisfaction in banks. Following is an attempt to explore the contributions made by various researchers in this regard in brief:

A. International Evidences

Various studies have been conducted across different countries to measure service quality and its relationship with customer satisfaction in banks. Zhou (2004) and Lopez et al., (2007) examined the impact of service quality dimensions on customer satisfaction and found that service quality was the key determinant of customer satisfaction and reliability was the most important dimension of service quality. Yavas et al., (2004) observed that service quality was the root cause of satisfaction and it was positively associated with commitment, word-of-mouth and complaint and switching behavior of customers. Shneider et al., 1980; Maddern et aL, 2007; and Blanchard and Galloway (1994) analyzed customers' as well as employees' perception of services in banks and found that role of customer contact employees significantly influenced customers' perception of service in banks.

Various researchers attempted to identify and analyse the determinants of customer satisfaction (Levesque and McDougall, 1996; Johnson, 1997; Jamal and Naser, 2002; Maddern et al., 2007 etc.) and exposed that both core and relational performances were found as important drivers of customer satisfaction. Johnson (1997) observed that commitment, attentiveness, friendliness, care and courtesy delighted the customers and also proved that responsiveness was the most important and tangibles was the most unimportant factor influencing customer satisfaction. The studies were also conducted to compare the expectations and perceptions of service quality among different groups of customers (Kangis and Vouklatos, 1997 and Arasli et al., 2005). Kangis and Vouklatos (1997) discovered that customers of private sector banks had lower level of difference between perceptions and expectations of service quality than the customers of public sector banks. Convenient location, opening hours, friendliness and courtesy of employees were not considered as important factors by the customers of both sector banks as per the study.

Researchers also examined the impact of technology and quality of e-banking services on customer satisfaction (Joseph et al., 1999; Casalo et al., 2008; Wong et al., 2008. Rod et al. 2009; Riquelme et al., 2009; Yap et al., 2010 etc.). Electronic delivery of services continuously increased the customers' expectations of service quality and these were not met and hence, customers are dissatisfied with online banking services (Joseph et al., 1999 and Wong et al., 2008). Traditional service quality was found to play a major role in building trust in e-banking (Yap et al., 2010). Perceived customer loyalty to website and customer satisfaction were two key determinants of positive word-of-mouth development and perceived usability of website was an indirect determinant of positive word-of-mouth and customer loyalty through satisfaction (Casalo et al., 2008). Both customer and online services attributes were found to have significant impact on customer satisfaction and overall internet banking service quality and customer satisfaction were positively associated (Roc et al., 2009; and Reliqueme and Street, 2009).

B. National Evidences

In India, service quality and customer satisfaction constructs gained more attention in new millennium. There were also some studies in late 1990s but it became popular after the year 2000. Rai and Devi (1995) studied customer service in rural and semi-urban areas and found that customers were not satisfied with the behaviour of staff. Sureshchander et al., (2002) evaluated the service quality and investigated its relationship with customer satisfaction in 43 banks in India and observed that service quality and customer satisfaction were found as two independent constructs but closely related. Various studies have been conducted to analyse customer satisfaction in public sector banks in India (Bhat, 2003; Singh and Saklani, 2004; Raul and Ahmad, 2005; Debashish and Mishra, 2005; Purohit and Pathardikar, 2007 etc). Customers were dissatisfied with the physical facilities, out dated equipment, banking operations and bank staff and satisfied with safe transacting with the bank (Bhat, 2003).There was a significant influence of service quality on customer satisfaction on customer loyalty and cross buying intentions (Singh and Saklani, 2004). There was a wide gap in rendering services in urban and rural areas (Raul and Ahmad, 2005). Debashish and Mishra (2005) observed that customer satisfaction was strongly influenced by computerization in banks, accuracy in transactions, attitude of staff and availability of staff at respective bank counter and promotion was the least impacting factor. Purohit and Pathardikar (2007) exposed in their study that almost, all the respondents were satisfied with the services provided by their banks.

Bhat and Gani (2003) and Arora (2005) compared the customer satisfaction in public, private and foreign banks in India and found that customers of public sector banks were least satisfied with the services provided Some researchers (Joshia and Koshi, 2005; Jain and Jain, 2006; Dash et al., 2007; and Texak and Kaur, 2009) compared service quality and customer satisfaction in public and private banks. Public sector banks provided better services to customers than private sector banks and customers of public sector banks were found to be more satisfied with the traditional banking services (Texak and Kaur, 2009). Joshia and Koshi (2005) observed that new generation banks were performing better than old generation banks and they suggested that old generation banks need to improve their performance especially on assurance, tangibility and responsiveness. There was considerable gap between the expectations and perceptions regarding services like service delivery, query handling, mobile banking, net banking, phone banking and turnaround time (Jain and Jain, 2006). Dash et al., (2007) suggested that the bank management should give more emphasis on assurance, reliability and responsiveness to meet the customers' expectations and indirectly to improve customer loyalty.

Sharma et al., (2008) enlighten in their study that service quality was positively associated with customer satisfaction and there was more significant difference in the quality of services being provided by the selected public and private sector banks and it was also found that banks located in small cities and towns were legging behind their counterparts in big and metropolitan cities. Gupta (2008) and Khan et al., (2009) evaluated the internet banking service quality from customers' perspective. Internet banking was found to be easier and speedier than conventional banking and trust was found as most important factor followed by accuracy and confidentiality (Gupta, 2008). Khan et al., (2009) observed that customers were satisfied with 'reliability' but dissatisfied with 'user friendliness' and high percentage of young generation having computer literacy, showed that internet banking was going to be very crucial in India.

The above review of the literature suggests that customer satisfaction is of utmost importance for the survival and growth of financial institutions. The growth of these institutions depends upon their ability to create or attract new customers and retention of satisfied customers leads to their survival in the long run. In order to be successful, banks today are competing with each other to satisfy their customers and thus to attract and retain loyal customers which ultimately helps banks to earn higher profits in future (Arora, 2005). Therefore, the present research work is being carried out to analyse the customer perception of service quality in banks and to identify the factors influencing customer satisfaction. An attempt has also been made to compare customer satisfaction regarding the services rendered by the banks across different locations i.e. rural and urban.

Objectives of the Study

The study has been planned with the following specific objectives:

(i) To study the customer perception of service quality in banks;

(ii) To identify the factors affecting overall customer satisfaction in banks and

(iii) To compare satisfaction level of rural and urban banks customers.

Database and Methodology

Sample Design: The study is conducted in Jalandhar district of Punjab by using randomized convenience sampling technique for data collection. The research work is restricted to individual depositors only and covers all the services available to them. A sample of 170 (85 from rural and 85 from urban branches) customers of five banks namely Punjab National Bank, State Bank of India, Punjab & Sind Bank, Oriental Bank of Commerce and State Bank of Patiala, has been taken. Only public sector banks have been taken as the branches of private sector and foreign banks are rarely found in rural areas of Punjab.

Table 1 Bank and Location wise Distribution of Respondents

Name of the Bank	Location of Bank Branch		Total
	Rural	Urban	
Punjab National Bank	22	26	48
State Bank of India	21	23	44
Punjab & Sind Bank	13	15	28
Oriental Bank of Commerce	18	10	28
State Bank of Patiala	11	11	22
Total	**85**	**85**	**170**

Data Collection Instrument: To collect primary data, the questionnaire has been designed, pre-tested and modified as per the requirements of pilot survey. It contains 32 items (which were later on reduced to 27 after checking the reliability through Cronbach alpha), on which the customer perception of service quality in banks has been measured on a 5 point scale (Likert Scale) ranging from 5 to 1, 5 is for 'Highly Satisfied' and 1 is for 'Highly Dissatisfied'.

Statistical Techniques used for Analysis: Factor Analysis, Multiple Linear Regression, Mean Scores and T-test have been used to analyse the data and get inferences. Factor Analysis is basically used to condense the larger number of variables into fewer dimensions and here, this technique has been deployed to identify the significant factors influencing customer perception of quality regarding banking services. Multiple Linear Regression method has been used to analyse the impact of the service quality factors on overall satisfaction of customers with their bank branch. And finally, T-test is employed to check the difference, if any, in the satisfaction level of rural and urban customers with respect to banking services and hence, to test the null hypothesis i.e.

H_0: *there is no difference between the satisfaction level of the customers of rural and urban bank branches.*

Results and Interpretations

Factors Influencing Customer Perception of Service Quality in Banks

There are a number of variables which influence customer perception of banking services. Here, the opinion of 170 bank customers regarding service quality in banks is analysed with the help of Factor Analysis. First of all, the reliability of the data on 32 variables has been checked with the help of Cronbach's alpha and after eliminating 5 variables (as the deletion of these items has resulted in increased overall alpha value), value of Cronbach's alpha is estimated to be .923 on 27 variables. After checking the reliability, the appropriateness of the data collected has been examined through Kaiser-Meyer-Olkin (KMO) measure of sampling adequacy and Bartlett's test of sphericity the values of which are arrived at .889 and 3563.309 (significant at 1%, p<0.000) respectively. For justification of usage of Factor Analysis, correlation matrix has been computed which exhibited good inter correlations among variables.

After calculating inter-correlations, the number of factors is derived by using Principal Component Method with Varimax rotation and on the basis of Eigen value (factor is taken whose Eigen value is more than one). Table 2 shows the results of the Factor Analysis by depicting the factor loadings of variables and Eigen values and percentage of variance explained by the factors derived. Nomenclature of the factors derived has been done on the basis of highest factor loadings of the variables loaded on the particular factor.

Table 2: Results of Factor Analysis

Sr. No.	Factor wise Dimensions	Factor Loading	Eigen Value	%age of Variance Explained
F_1	**Employees' Behaviour & Skills**		**6.341**	**23.487**
a.	Employees Understand the Needs Of Customers	.879		
b.	Error Free Records and Less Mistakes	.412		
c.	Courteous and Helpful Behaviour of Bank Staff	.845		
d.	Satisfactory Redressal of Complaints by Employees	.884		
e.	Employees' Behaviour Instils Confidence in Customers	.859		
f.	Employees give Individual Attention to Customers	.879		
g.	Employees' Interest to Solve Customers' Problems	.878		
h.	Employees Explain Banking Rules to Customers	.894		
F_2	**Service Time**		**5.486**	**20.318**
a.	Prompt Service by Employees	.894		
b.	Quick Response to Customers' Queries	.899		
c.	Speed of Depositing Money	.564		
d.	Time Taken for Opening Account	.432		
e.	Waiting Time in Queues	.897		
f	Speed of Withdrawals	.551		
g.	Dependable Services from Employees on Time	.902		
h.	Time Taken for Updating Pass Book	.878		
F_3	**Availability of Diversified Products & Skilled Personnel**		**2.638**	**9.769**
a.	Availability of Employees at Respective Counters	.571		
b.	Wide Range of Products and Services	.762		
c.	Innovativeness in Introducing New Schemes	.627		
d.	Knowledge of Employees about Products and Services	.747		
F_4	**Tangibles**		**1.715**	**6.350**
a.	Computerization and Modern Equipments	.466		
b.	Proper Sitting Facilities for Waiting inside the Bank	.746		
c.	Well Dressed Employees	.871		

F_5	Cost & Return			
a.	Service Charges	.753	1.633	6.049
b.	Interest on Savings	.598		
F_6	Technology & Promotion			
a.	Availability of ATMs at Convenient Places	.705	1.495	5.536
b.	Visually Appealing Service Materials such as Pamphlets, Statements, etc.	.445		

Six factors have been identified by the factor analysis i.e. Employees' Behaviour & Skills, Service Time, Availability of Diversified Products & Skilled Personnel, Tangibles, Cost & Return and Technology & Promotion which influence the customer perception of banking services. All six factors together explain 71.509% of variations in data. Following is the brief explanation of the factors derived:

F_1 - Employees' Behaviour & Skills: This factor is the most important factor on which 8 variables are loaded and it explains 23.487% of variance with the Eigen value of 6.341. It deals with the customer perception of bank employees, their behaviour, their efficiency, interest and skills in delivering services and solving customers' problems.

F_2 - Service Time: This is the second important factor which deals with the time taken by employees in delivering services and handling queries. It is having Eigen value of 5.436 and explains 20.318% of variance. On this factor also, 3 variables are loaded and highest loading is for the variable Dependable Services from Employees on Time (.902) followed by Quick Response to Customers' Queries (.899) and Waiting Time in Queues (.897).

F_3 - Availability of Diversified Products & Skilled Personnel: This factor is concerned with the availability of diversified and innovative products/ services/schemes and skilled employees having complete knowledge of services to be delivered. Four variables are grouped under this factor and it explains 9.769% of variance and has Eigen value of 2.638.

F_4 - Tangibles: Tangibles deals with the physical facilities provided by the bank such as well dressed employees, proper sitting facilities and computerisation and modern equipment. 'Tangibles' explains 6.350% of variance and carries Eigen value of 1.715.

F_5 - Cost & Return: It is concerned with customer perception of service charges and interest on savings and explains 6.049% of variance picking 1.633 Eigen value.

F_6 - Technology & Promotion: Two variables are loaded on this factor i.e. Availability of ATMs at Convenient Places and Visually Appealing Service Materials such as Pamphlets, Statements, etc. which explain 5.536% of variance. The factor carries Eigen value of 1.495.

Determinants of Overall Customer Satisfaction with Bank

To analyze the relationship between underlying factors affecting customer perception of service quality in banks and overall customer satisfaction, Multiple Linear Regression Analysis is used. For this, Mean Scores of the factors extracted by Factor Analysis are calculated and taken as independent variables and overall customer satisfaction is taken as dependent variable which was measured on 5 point scale ranging from 5 to 1. The results of regression analysis are revealed by the following Table 3. The table shows the impact of factors derived on overall customer satisfaction. The table shows that the value of F-test comes to be 29.140 which is significant at 1% level and it shows that the model is statistically significant at 99% confidence level. R2, the coefficient of determination, works as a measure of strength of association in regression analysis and represents the variations in dependent variables which are accounted for by the variations in independent variables (Nargundkar, 2008).

Table 3: Determinants of Overall Customer Satisfaction

Independent Variables	Dependent Variable	Un-standardized Coefficients		Beta Coefficients	t value	Sig.
		B	Std. Error			
Constant	Overall Satisfaction	-.860	.573		-1.501	.135
Employees' Behaviour & Skills		.455	.069	.464	6.571***	.000
Service Time		.194	.094	.136	2.062**	.041
Availability of Diversified Products & Skilled Personnel		.220	.103	.136	2.127**	.035
Tangibles		.093	.109	.051	.861	.391
Cost & Return		.218	.114	.113	1.912*	.058
Technology & Promotion		.129	.065	.113	1.974**	.050
R .719						
R Square .518						
Adjusted R Square .50						
F Value 29.140***						

Note: ***significant at 1%, **significant at 5% and *significant at 10%.

Table 3 reveals the values of R^2 and adjusted R^2 (adjusted for degrees of freedom) as .518 and .50 respectively which indicate that 51.8% of variation in overall customer satisfaction is explained by six underlying factors of service quality.

If we see the impact of independent variables individually, we observe that first factor i.e. 'Employees Behaviour & Skills' is having highest beta coefficient (.469) and t value (6.571) that are statistically significant at 1% level (99% level of confidence). Therefore, this factor is showing strongest positive impact on overall customer satisfaction followed by Availability of Diversified Products & Skilled Personnel, Service Time and Technology & Promotion whose beta coefficients are positive and statistically significant at 5% (95% confidence level). Beta coefficient of Tangibles shows that this factor influences the dependent variable but its impact cannot be taken as statistically significant. The impact of Cost & Return factor is statistically significant at 10% level. It can be concluded from the analysis that all the six factors have a positive impact on overall customer satisfaction but the effect of Tangibles is not statistically significant. Therefore, it evidences that service quality has direct positive influence on customer satisfaction (Cronin and Taylor, 1992; Ennew and Binks, 1996; Yavas et al., 1997; Lasser et al., 2000; Jamal and Naser, 2002; Zhou, 2004; Singh and Saklani. 2004; Arasali, 2005; Lopez et al., 2007 etc.).

Customer Satisfaction in Rural and Urban Bank Branches

Liberalization, deregulation and increasing competition have made the Indian banking industry as buyer's market and hence, the banks have started to extend their customer base to the areas which were left unattended earlier. They have started introducing innovative and electronic services such as ATMs, Internet banking, Telebanking, etc. selectively in metros, then extended to cities, towns and finally to the villages. Therefore, whether the area is urban or rural, banks are trying to diversify their products and services to the masses. But the question is whether the rural customers are offered services/products as efficiently and speedily as urban customers are getting. Raul and Ahmad (2005) observed that there was a wide gap in rendering the services in urban and rural areas and rural banks customers were found to be dissatisfied on larger number of variables than urban ones. Rai and Devi (1995) in their study revealed that rural customers were not satisfied with branch staff. Therefore, an attempt has also been made in the present paper to compare satisfaction level of customer satisfaction regarding the services rendered by the banks in rural and urban areas. For this, Independent Sample T-test has been deployed on the factors extracted by Factor Analysis to study the gaps in satisfaction level of customers of both areas, the results of which are shown by the Table 4. The table depicts the mean score, mean difference and t value of the factors affecting customer satisfaction in banks. Mean scores of the factors show that on majority of the factors, satisfaction level of rural customers is higher as compared to urban ones. Therefore, this finding is not in line with the findings of the earlier study of Raul and Ahmad, 2005. Tangibles and Technology & Promotion are the only two factors on which urban customers are showing higher level of satisfaction. The reason being that public sector banks are still lacking in introducing fully computerized systems and providing ATM facilities in rural areas. The analysis reveals that difference between mean scores is highest for Service Time, t value of which is statistically significant at 1% level. The rural customers on this factor are more satisfied than urban ones as shown by mean score which is 3.9522 and it is closer to 'Satisfied'. The mean score of rural customers' perception on Technology & Promotion is lowest among all factors which is 3.0824 and it shows that rural customers are less satisfied with this factor than urban customers. The t value of differences is statistically significant at 1% level.

Table 4: Results of Independent Sample T-test

Factors influencing Satisfaction	Location	Mean Score	Mean Difference	t	Sig.
Employees' Behaviour & Skills	Rural	3.670	.406	2.513**	0.013
	Urban	3.264			
Service Time	Rural	3.952	.412	3.803***	0.000
	Urban	3.541			
Availability of Diversified Products & Skilled Personnel	Rural	3.532	.094	0.949	0.344
	Urban	3.438			
Tangibles	Rural	4.051	-.003	-0.038	0.970
	Urban	4.054			
Cost & Return	Rural	3.841	.047	0.561	0.576
	Urban	3.794			
Technology & Promotion	Rural	3.032	-.400	-2.897***	0.004
	Urban	3.432			
Overall Customer Satisfaction	Rural	4.071	**.447**	**2.835*** **	**0.005**
	Urban	3.624			

Note: ***significant at 1% and **significant at 5%.

Difference also exists in the satisfaction level of customers of both areas on the factor Employees' Behaviour & Skills which is statistically significant at 5% (95% confidence level) showing higher level of satisfaction of rural customers. No significant difference is found in satisfaction level of customers for the remaining three factors. But when it comes to overall customer satisfaction, we observe that significant difference exists in the satisfaction level of rural and urban customers which is evidenced by t value of mean difference that is statistically significant at 99% level of confidence and hence, null hypothesis cannot be accepted.Therefore, it can be concluded from the analysis that there is significant difference in the satisfaction level of customers of rural and urban bank branches and the satisfaction level of rural customers is significantly higher than the urban ones.

Conclusion

Present research work has been carried out to analyse and compare the customer perception of banking services in rural and urban branches and is concluded with the following major findings:

(i) Factor Analysis extracted six factors which influences the customer perception of service quality in banks which significantly explain 71% of variations in the data. These factors are Employees' Behaviour & Skills, Service Time, Availability of Diversified Products & Skilled Personnel, Tangibles, Cost & Return and Technology & Promotion.

(ii) The results of Multiple Linear Regression analysis show that all the service quality factors, identified by Factor Analysis, have direct positive relationship with overall customer satisfaction showing 51.8% of variation in overall customer satisfaction. Employees' Behaviour & Skills factor has the strongest influence followed by Availability of Diversified Products & Skilled Personnel, Service Time and Technology & Promotion.

(iii) Mean scores of almost all the factors lie in between '3' to '4' i.e. 'neither satisfied nor dissatisfied' to 'satisfied' indicating that public sector banks are required to improve their customer service to make the customers highly satisfied and retain them in long run. Therefore, they should make extra efforts in improving the performance of service quality factors especially by making more investment in technology and organising training programmes for employees to increase their proficiency in delivering services.

(iv) Significant difference is found between satisfaction level of rural and urban bank customers as shown by t values of mean differences. Rural customers are found to have higher level of satisfaction than urban ones. Reason being that in rural branches, authors personally observed that majority of the customers are having good rapport with bank staff and hence, they do not find any difficulty in availing the services. Moreover, less number of customers and low range of services result in small queues which in turn make the services available readily in time.

Limitations of the Study

Like any other research work, the present study has following certain limitations:

(i) The study covers only one district of Punjab.

(ii) Perception of only individual depositors has been studied.

(iii) The study is based on primary survey which has been conducted through a structured questionnaire. The respondents might have been deliberately given the responses which they actually do not experience and hence, subjectivity might be present in the responses.

(iv) Only public sector banks have been selected for the study as the branches of private sector and foreign banks are rarely found in rural area.

Scope for Further Research

Present study has been conducted to analyze customer perception of service quality in banks and its impact on overall customer satisfaction. Further research work can be done to examine the impact of service quality and customer satisfaction on customer loyalty, word-of-mouth communication, etc. Present research work is conducted in one district only and restricted to individual depositors. More districts can be covered for more generalized findings. Studies can also be initiated on borrowers' perception of loan services together or individual loan service. Studies can also be conducted to compare the perception of banking services among rural, semi-urban and urban areas of Punjab.

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Preference and Perceptual Mapping of Mutual Fund Schemes

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There are different kinds of mutual fund schemes available with different features to cater to the needs of different people. But the investors may feel that some schemes may have similar features In this study different mutual fund schemes are mapped using multidimensional scaling from customer perspective on the features of different schemes The schemes taken for the study are Index fund, Growth fund Income fund, Liquid fund, Mid-cap fund, Large-cap fund and Sectoral fund and attributes used are risk, safety, return, liquidity. From the study it is concluded that the preference of investors varies according to the investment experience, family income and number of earning members in the family The investors also have similar perception about large cap and sectoral fund schemes with respect to risk Each scheme varies from each other with respect to liquidity and safety. The findings from this study will be useful to the mutual fund operators to understand where there is a gap and where there is a cluster, accordingly they can bring new scheme for investment or restructure the existing scheme.

Keywords: *Perpetual Mapping, Preference of Mutual Fund Investors, Attributes of Mutual Fund Schemes*

Introduction

Perceptual mapping is used to describe a set of techniques designed to represent perceptions about various mutual fund schemes and their similarities in a visual "space". It is useful for providing highly intuitive representations in order to position mutual fund schemes on dimensions critical to consumer perceptions in that visual space. A variety of simple to complex statistical methodologies such as multi-dimensional scaling, factor or cluster analytical methods, and conjoint analysis can be used. Usually these techniques result in schemes being mapped on 2 to 3 dimensions. Two - dimensional maps are the most popular as they are most easily understood and interpreted by clients. This study deals most popular mutual fund schemes such as Index fund, Growth fund, Income fund, Liquid fund, Mid-cap fund, Large-cap fund and Sectoral fund. This study tries to map different mutual fund schemes from customer perception. This mapping helps to identify the gap between the actual targeted segments and the segments where the product reached. This study helps in eliminating the redundant schemes which target the same segments and also helps in promoting the right schemes for the right segments.

Objectives of the Study

To map various schemes of mutual funds such as index fund, growth fund, income fund, liquid fund, large-cap fund, mid-cap fund and sectoral fund with respect to different attributes like returns, risk, safety, liquidity and meeting customer expectation.

- To find out the various mutual fund schemes preferred by the respondents.
- To find out the basis on which respondents choose their mutual fund schemes.
- To find out the post purchase behaviour of mutual fund investors.
- To find out segments served by each mutual fund scheme.

Review of Literature

Gupta (1994) made a household investor survey with the objective to provide data on the investor preferences on MF's and other financial assets. The findings of the study were more appropriate, at that time, to the policy makers and mutual funds to design the financial products for the future.

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Madhusudhan and Jambodekar (1996) have conducted a study to assess the awareness of MFs among investors, to identify the information sources influencing the buying decision and the factors influencing the choice of a particular fund. The study reveals among other things that Income Schemes and Open Ended Schemes are more preferred than Growth Schemes and Close Ended Schemes during the then prevalent market conditions. Investors look for safety of Principal, Liquidity and Capital appreciation in the order of importance; Newspapers and Magazines are the first source of information through which investors get to know about MFs/Schemes and investor service is a major differentiating factor in the selection of Mutual Fund Schemes.

Syama Sunder (1998) conducted a survey to get an insight into the mutual fund operations of private institutions with special reference to Kothari Pioneer. The survey revealed that awareness about Mutual Fund concept was poor during that time in small cities. Agents play a vital role in spreading the Mutual Fund culture; open-end schemes were much preferred then; age and income are the two important determinants in the selection of the fund/scheme; brand image and return are the prime considerations while investing in any Mutual Fund.

Shanmugham (2000) conducted a survey of 201 individual investors to study the information sourcing by investors, their perceptions of various investment strategy dimensions and the factors motivating share investment decisions, and reports that among the various factors, psychological and sociological factors dominated the economic factors in share investment decisions.

Anjan Chakarabarti and Harsh Rungta (2000) stressed the importance of brand effect in determining the competitive position of the AMCs. Their study reveals that brand image factor, though cannot be easily captured by computable performance measures, influences the investor's perception and hence his fund/scheme selection.

Nalini and Sasikumar (1996) studied about the mutual funds in India. The main objectives of the study were to analyze how the mutual fund schemes help to mobilize savings from the household sector. Mutual funds have now made their presence felt in Indian financial market by mobilizing the savings of household and corporate sectors and deploying the same in the market. The period of study was 1987 – 91. During this period, the share of mutual funds in the household financial savings rose from 2.3%to 3.5% and estimates showed that more than 5.6% of the total financial savings of the Indian public were invested in mutual funds.

Chiranjeev S. Kohli and Lance Leuthesser (1993) have stated that product positioning is a crucial component of competitive marketing strategy. Perceptual mapping techniques are frequently used to aid managers in making product positioning decisions. He has presented an overview of perceptual mapping and explains the conceptual foundation, and also compares three widely used techniques – factor analysis, discriminant analysis, and multidimensional scaling. He has highlighted differences in these analytical techniques, with implications for marketing managers.

Steven A. Sinclair, Edward C. Stalling (1993) described the uses perceptual mapping, a consumer-based modeling technique having both diagnostic and strategic applications, particularly in determining the threat posed by substitute products and in developing competitive strategies. He has used a case study approach of analyzing companies in traditional manufacturing industries who are attempting to move from basic commodities to faster growing "value-added" products. In the end he has concluded that perceptual maps are effective in developing new products and product positioning and can be easily used by managers in developing actions.

Kenneth Teas. R., Terry H. Grapentine (2004) have done a research for testing marketing communication themes. The theme testing approach, which was based on perceptual mapping procedures, focused on communication potency issues such as the degree to which the communication achieves marketing communication objectives, is compatible with the image of the source, is compatible with the target consumers' preferences and is differentiated from competitors' market positions. The results of convergent and discriminant validity tests suggested strong support for the theme testing method.

Richard J. Fox (1997) has stated perceptual mapping techniques are used to graphically represent perceptions of brands in a category, companies in an industry, and so forth. The data required to construct perceptual maps using typical methods can be difficult for respondents to provide and time-consuming to collect. An alternative, but relatively obscure perceptual mapping technique is rooted in correspondence analysis, and involves fundamental matrix decomposition.

Research Gap

Different authors have used mapping techniques for brand positioning, but no one has used it for mapping features of mutual fund schemes based on perception of investors. There are many studies available in investors preference and perception of investors towards mutual fund schemes, but studies are not available in comparing perceptual mapping and preference of investors towards mutual fund schemes. This research gap has motivated the authors to carry out this research

Methodology

This study has been conducted in Chennai with a sample size of 520 respondents. The Chennai city is divided into three parts namely north, south and central. Convenience sampling is used to select the respondents. Well structured questionnaire with different types of questions were used for data collection The purpose of this study is to map various schemes of mutual funds such as index fund, growth fund, income fund, liquid fund, large-cap fund, mid-cap fund and sectoral fund with respect to different attributes like returns, risk, safety, liquidity and meeting customer expectation. Reliability test is conducted by using croanbach alpha method on the statements in the questionnaire and the value obtained is .703 which is greater than .6 and hence the statements of the questionnaire are presumed to be reliable.

Investor Preference

Before analyzing the perception of investors towards different mutual fund schemes on various features, it is necessary to know what are all the schemes most preferred by the them. It is also important to know what kind of people prefers different kinds of schemes. In this section frequency of switching and no of schemes preferred by the people is also analysed.

Table 1: Preferred Mutual Fund Schemes

Mutual Fund Schemes	Percent
Index fund	9.5
Growth fund	15.5
Income fund	32.5
Liquidity fund	5.5
Mid-cap fund	7.5
Large-cap fund	21.5
Sectoral fund	8.0
Total	**100.0**

From the above table it can be inferred that around 32.5 percent of the respondents have used Income fund, 21.5 percent of the respondents have invested in Large-cap fund and only 5.5 percent respondents preferred Liquidity fund. Thus the most preferred mutual fund schemes are income scheme and large cap fund. The income fund will give regular return. The fund mobilised in large cap fund is invested on large cap companies which are more dependable. This might be the reasons for investing in such schemes. The influence of demographic variables on selection of mutual fund schemes is analyzed using chi-square test. The null hypothesis for this test is (H0), there is no association between demographic variables and the mutual fund schemes preferred by the respondents.

Table 2: Impact of Demographic variables on Schemes preferred

S. No	Variable	Chi-Square value	Degree of Freedom	Significance level
1	Gender	90.358	6	0.000
2	Age group of respondents	161.8	24	0.000
3	Education level of respondents	143.412	18	0.000
4	Profession of respondents	164.926	18	0.000
5	Family income per month	122.057	24	0.000
6	No. of earning members in the Family	36.639	18	0.000

The Chi-square analysis gives low significance value (below 0.05) for all the demographic variables, which means that the Null Hypothesis is rejected. Thus it can be stated that all the demographic variables such as gender, age, education, profession, family income and no. of earning members in the family have association with the mutual funds schemes preferred by the respondents.

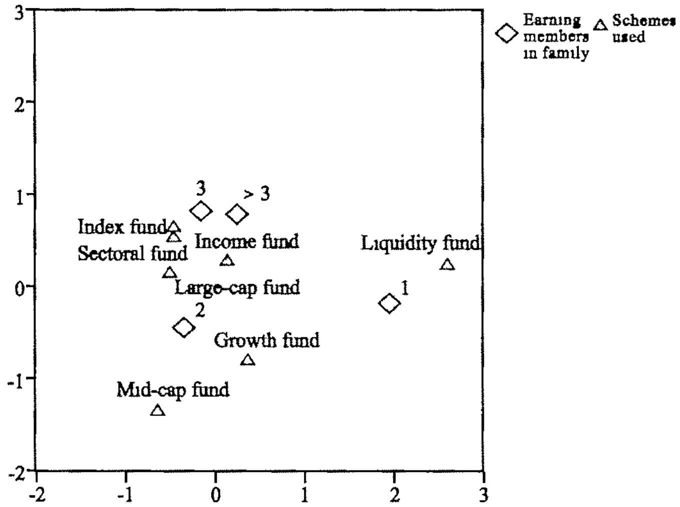

Figure 1: Schemes and No. of Earning Members

Correspondence analysis diagram illustrates that respondent who have single earning member in the family use liquid fund to have liquidity in his investment. Similarly respondents who have 3 earning members in their family prefer index fund and sectoral fund. The people who have two earning members in the family have invested in growth fund. Therefore the preference of mutual fund schemes varies according to number of earning members in the family. Hence no. of earning members in the family has impact on the preference of schemes.

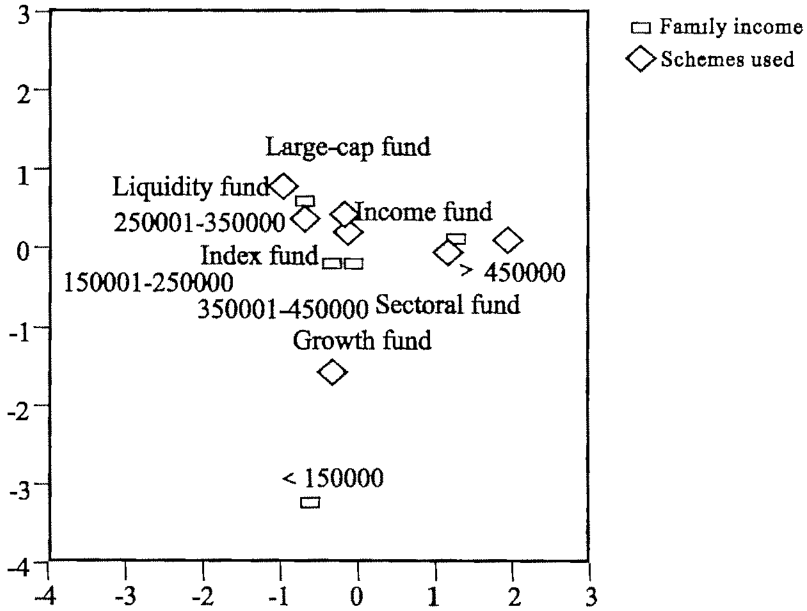

Figure 2: Family Income and Schemes Preferred

The respondents with the income level of Rs.2,50,000 to Rs.3,50,000 prefer liquid fund or large-cap fund and respondents who have income above Rs.4,50,000 prefer Sectoral or Mid-cap fund. The large cap fund is comparatively risk free than small cap fund. This shows that middle income people are investing in comparatively risk free investment. From this analysis it can be concluded that income is having impact on choice of fund.

Table 3: Tenure of the Respondent using Mutual Funds

Using Mutual Fund	Percent
< 6 months	10.5
6 months- 2 years	24.0
2 years- 3years	21.0
3 years- 5 years	16.0
> 5 years	28.5
Total	**100.0**

Around 28.5 percent of the respondents have investment experience of more than five years. This people have started their investment in mutual fund five years before. From the table it is clear that investor spread over in all experience categories.

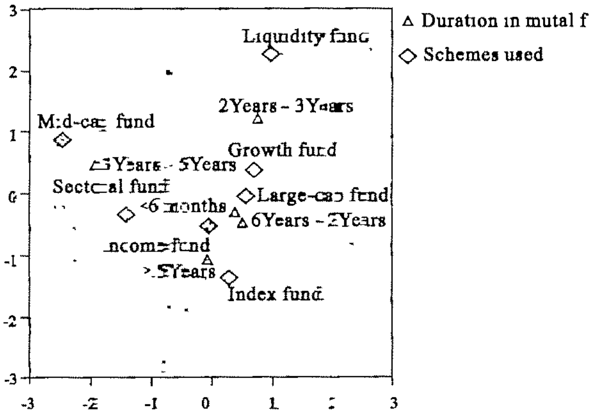

Figure 3: Investment Experience and Schemes Preferred

From the figure 3, it is inferred that the respondents having investment experience of more than 5 years prefer Index fund whereas person with experience of 3 to 5 years invest Mid-cap fund. People who have experience of 6 months to 2 years invest in Income fund. This means that people with more experience prefer index based fund and medium level experienced people prefer mid-cap fund with more risk. Hence there is an association between investment experience and scheme preferred. The chi-square analysis shows that this association is a significant association with more than 99 percent level of confidence (significant value is 0.000, Chi-Square value 190.875).

Table 4: Frequency of Switching of Schemes

Switching of Schemes	Percent
Frequently	26.5
Occasionally	40.5
Rarely	22.5
Never	10.5
Total	**100.0**

Switching of schemes occurs when the investor is not satisfied with the scheme. This causes a damages to the image of the scheme subsequently the scheme tends to lose its potential investors. The cost of acquiring new investors is more when compared to maintaining an existing investor. From the above table it can be inferred that around 10.5 percent of the respondents never switch schemes and only 26.5 percent of the respondents switch schemes frequently. Around 40 percent of the investors switch occasionally. This means most of the people switch only occasionally.

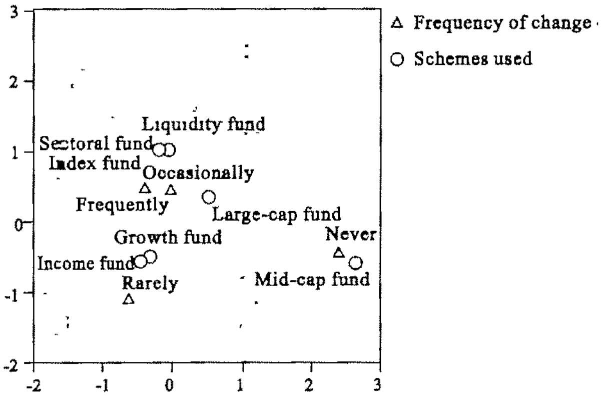

Figure 4: Schemes preferred and switching of schemes

The correspondence analysis diagram illustrates that people who have invested in Income fund rarely switch their scheme because they get regular income. Conversely those who have invested in liquid fund switch frequently. This might happen because the people prefer liquid fund because they want to sell it in short term. People invested in Mid-cap fund never switch their scheme because it is providing attractive return in the recent years. Hence there is an association between frequency of switching schemes and scheme invested by people. This association is a significant association as per chi-square test (Significant value 0.000, chi-square value143.276).

Table 5: Number of Mutual fund schemes used

Number of Schemes	Percent
1	41.0
2	37.5
3	21.5
Total	**100.0**

From the above table it can be inferred that around 41 percent of the respondents have invested in only one Mutual fund scheme and 37.5 percent of the respondents have invested in two Mutual fund schemes and only 21.5 percent of the respondents have invested in three Mutual fund schemes. So it can be stated that most of the people prefer to go for only one mutual fund scheme.

Table 6: Impact of Demographic Variables on Number of Schemes Invested

S. No	Variable	Chi-Square value	Degree of Freedom	Significance level
1	Education level of respondents	47.448	6	0.000
2	Profession of respondents	34.181	6	0.000
3	Family income per month	93.016	8	0.000
4	No. of earning members	50.646	6	0.000

The Chi-square analysis reveals low significance value (typically below 0.05) for the association between demographic variables and number of schemes invested. This means that the Null Hypothesis is rejected. The accepted hypothesis is that there exists an association between demographic variables (educational level, profession, family income, no. of earning members) and number of schemes invested.

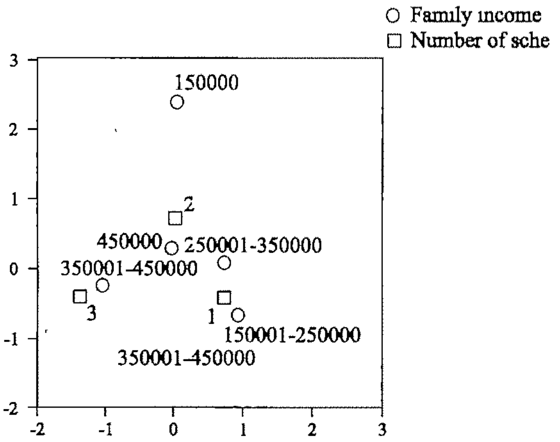

Figure 5: Number of schemes used and Annual income of respondent

The correspondence analysis diagram indicates that respondents with family income in the range of 1, 50, 000 to 3, 50, 000 have invested in only one mutual fund scheme. The respondents who have annual income between Rs.3, 50, 000 to 4, 50, 000 invested in 3 mutual fund schemes. This means that number of schemes invested increases with rise in family income. Thus family income is having impact on number of schemes invested.

Perceptual Mapping

Perceptual mapping means positioning different mutual schemes based on the perception of investors on various features of mutual fund schemes. The various factors considered are return, risk, liquidity, safety and expectation of investors. Two dimensional multidimensional scaling is used for mapping mutual fund schemes.

From the figure 6 it is deduced that Mid-cap and Income fund are in one dimension and they are closely related in terms of return. The investors perceive that mid-cap fund and Income schemes are providing similar return. Similarly Large-cap and Index fund have resemblance in their return. It can also be noted that companies included in the index are large cap companies. Liquid fund and Sectoral fund are in one dimension and growth fund is in entirely different dimension.

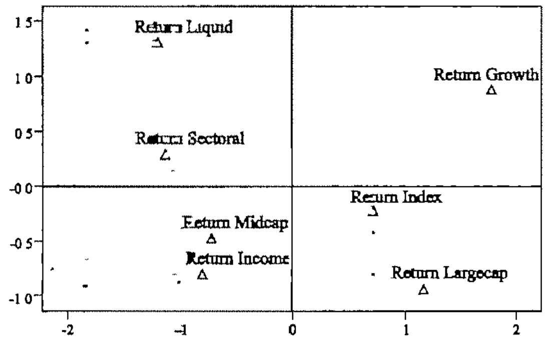

Figure 6: Return of the Scheme

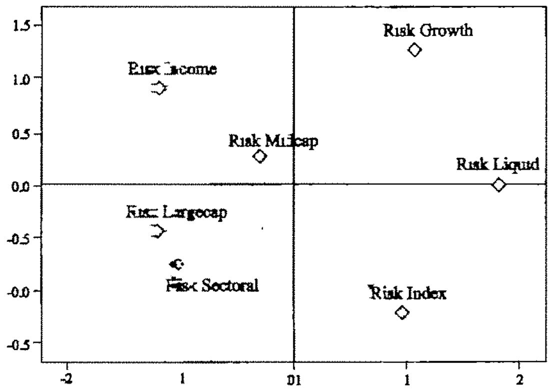

Figure 7: Risk of the scheme

From the figure 7 it is understood that respondent's perception similar for Large-cap and Sectoral funds with respect to risk. Similarly the risk level of Income and Mid-cap fund are also perceived to be the same. Normally the risk level of income scheme will be less, the investors feels the risk level of mid cap also less.

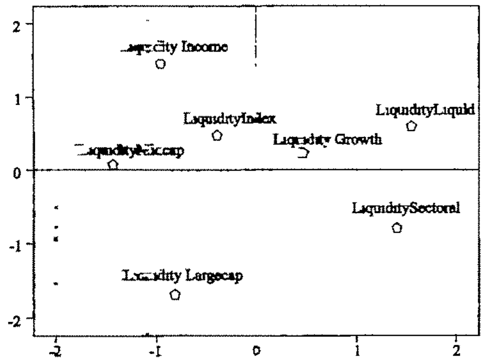

Figure 8: Liquidity of the scheme

Growth and Liquid funds are similar in liquidity of the scheme. The term of liquid fund is very short term the units of growth fund can be liquidated at any time because growth fund units are listed in the stock market. This might be the reasons for the investors to perceive the liquidity level of growth fund and liquid fund are similar.

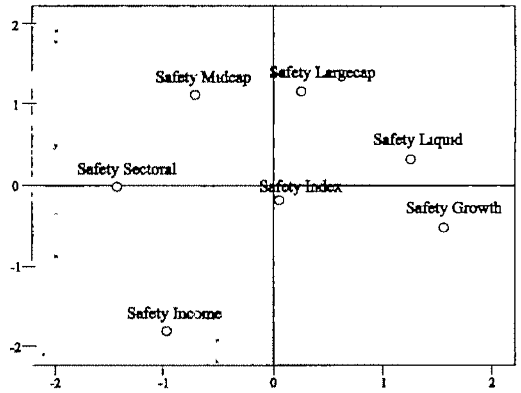

Figure 9: Safety of the scheme

Index fund and Growth fund falls in the same category with respect to safety. Liquid fund and Large-cap fund falls in another category. Sectoral and Mid-cap are same in the safety of the scheme. Rules and regulation of SEBI which offers safety is same for almost all schemes but investors feel there is a difference among schemes with respect to safety.

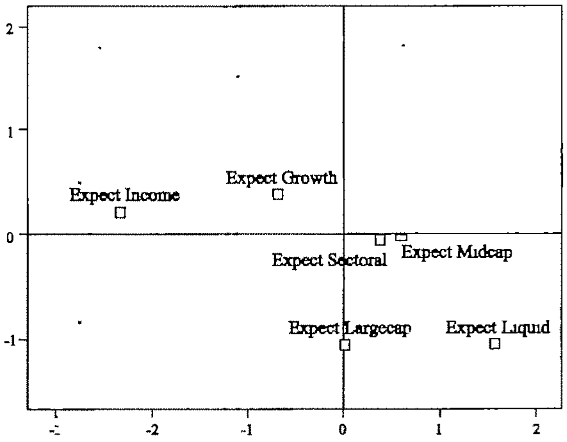

Figure 10: Expectation of the scheme

Based on meeting the expectation of the respondent, Sectoral and mid-cap fund fall in same category, while Income and growth fund fall in another category and Large-cap and Liquid fund are same in meeting the expectation of the respondents.

Scheme-wise Analysis

The scheme wise analysis means mapping various attributes like return, risk, liquidity, safety and expectation for a particular scheme.

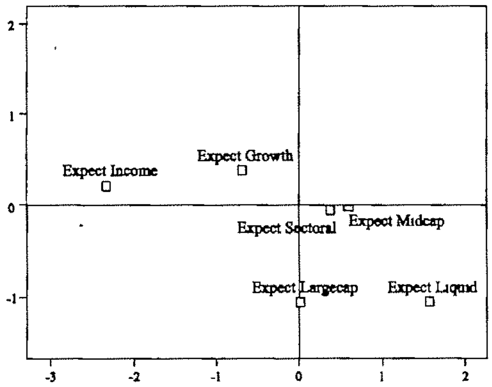

Figure 11: Mapping of Index fund attributes

It is inferred from the above diagram that respondents perceives that the liquidity and safety of Index fund as similar factor, the return, risk and expectation are considered as separate factor. The index securities have high frequency of marketability which provides liquidity to the index fund as a whole. As the index securities are closely watched by many people they have to follow all norms. Likewise index fund also expected to provide high level of safety to the investors. This makes the people to have similar perception about liquidity and safety of index funds.

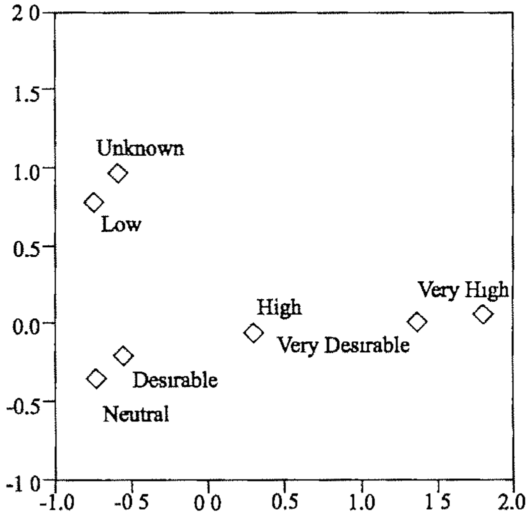

Figure 12: Risk and Return of Index fund

From the above diagram it is inferred that the respondent who say very desirable to return of index fund also say that the index fund have very high risk, similarly those who say the return of index fund is low also say that the risk of index fund is unknown. This means that return and risk go hand in hand. Though there is a relationship between risk and return, the relationship is not as close as the relationship between safety and liquidity.

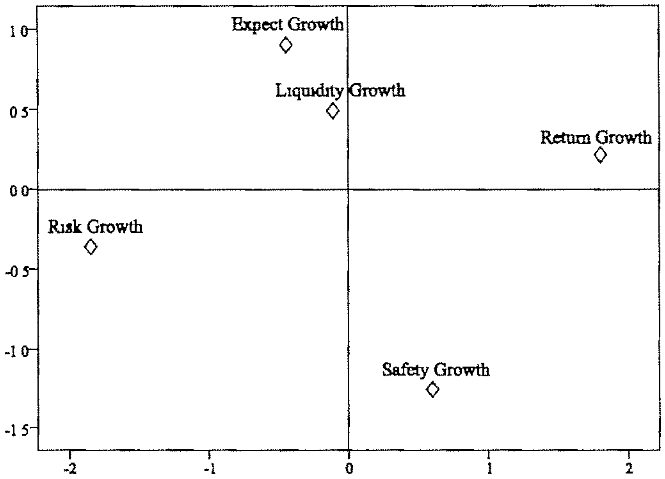

Figure 13: Mapping of Growth fund attributes

It is inferred from the above diagram that investors perceives that the liquidity and meeting the expectation are similar factors for growth fund, whereas the risk, safety and return are considered as separate and unique factors. They don't have any resemblance to each other. Those who feel that the growth fund meet their expectations also feel that the liquidity of the scheme is good.

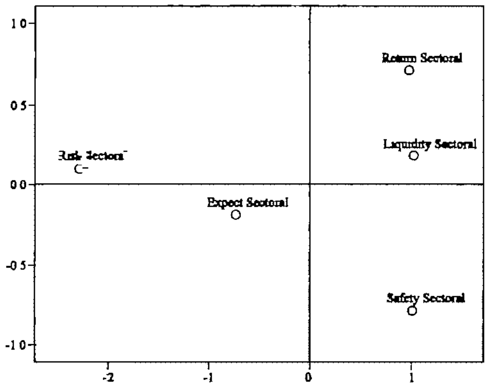

Figure 14: Mapping of Sectoral fund attributes

The return and liquidity of sectoral fund are perceived as similar factors. The safety of sectoral fund is considered as a special factor. The risk and fulfillment of expectation by sectoral fund are perceived as two different factors.

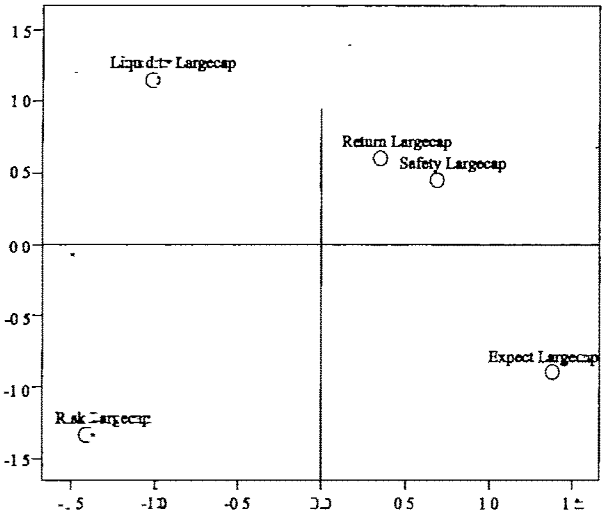

Figure 15: Mapping of Large-cap fund attributes

The risk level of Large-cap fund is considered to be a unique factor. The return and safety of Large-cap fund are considered to be similar factor. Meeting expectation and liquidity of large-cap fund are considered to be two separate factors.

The return and safety of Mid-cap fund are considered as same factors. It is also known that the Liquidity and expectation of Mid-cap fund are considered to be two different factors. Risk of mid-cap fund is considered as special factor.

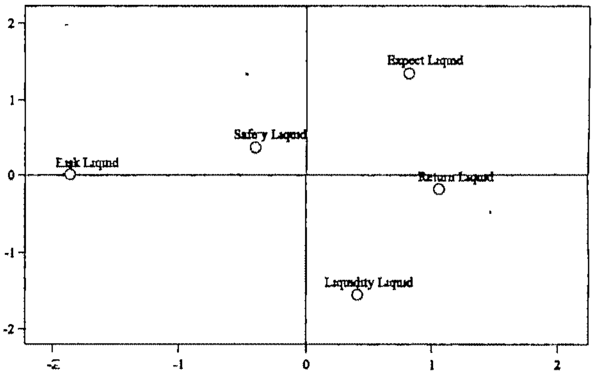

Figure 16: Liquid fund attributes

The liquidity and return of Liquid fund are perceived in the same manner. It is also inferred that safety and risk of Liquid fund resembles each other. The expectation of liquid fund is perceived to be a separate factor.

Likewise the safety and liquidity of income fund are considered as similar factors, the return and expectation of income fund are perceived in the same manner. The risk of income fund is perceived to be a separate factor.

Table 7: Annual Income and Return of Various Schemes

Schemes	F	Sig.
Index	10.480	.000
Growth	22.761	.000
Income	14.115	.000
Liquid	4.071	.003
Mid-cap	21.111	.000
Large-cap	18.446	.000
Sectoral	5.848	.000

The relationship between income of the respondents and their perception about the return provided different schemes is analysed using analysis of variance. The significant value for the relationship is less than 0.05 for all the mutual fund schemes therefore null hypothesis is rejected. This means that the people who have different family income have different perception about return given by particular scheme. This is the case for all schemes. The same scheme cannot give different return to different people. But the perception of different category people varies because their expectation may be different.

Table 8: Demographic variables and safety of various schemes

Source	Dependent Variable	F	Significance
Age	Index(S)	7.051	0.000
	Growth(S)	6.865	0.000
	Income(S)	6.487	0.000
	Liquid(S)	11.552	0.000
	Midcap(S)	9.852	0.000
	Large cap(S)	13.992	0.000
	Sectoral(S)	6.169	0.000
Education	Index(S)	13.275	0.000
	Growth(S)	2.443	0.009
	Income(S)	15.834	0.000
	Liquid(S)	3.484	0.017
	Midcap(S)	5.482	0.001
	Large cap(S)	2.892	0.046
	Sectoral(S)	3.360	0.020
Occupation	Index(S)	3.445	0.013
	Growth(S)	4.875	0.003
	Income(S)	27.762	0.000
	Liquid(S)	15.086	0.000
	Midcap(S)	8.071	0.000
	Large cap(S)	20.184	0.000
	Sectoral(S)	11.036	0.000
Family Income	Index(S)	8.208	0.000
	Growth(S)	42.838	0.000
	Income(S)	19.828	0.000
	Liquid(S)	7.833	0.000
	Midcap(S)	7.481	0.000
	Large cap(S)	27.005	0.000
	Sectoral(S)	12.700	0.000

The multivariate analysis of variance is used to test the relationship between different demographic variables and safety provided by different schemes. The above table shows that the significant value for the relationship is less than 0.05 for almost all cases. This means that different age category people have different perception about the level of safety of index fund. The different age category people differ not only on safety of index fund but also differ on other fund. Likewise people with different educational background have different perception about safety of mutual fund schemes.

Table 9: Mean Values

S. No	Scheme	Mean	Rank
1	Index(R)	4.165	4
2	Growth(R)	4.22	2
3	Income(R)	4.35	1
4	Liquid(R)	4.2	3
5	Midcap(R)	4.115	6
6	Large cap(R)	3.895	7
7	Sectoral(R)	4.155	5

The above table indicates that the mean value of Income fund is high which indicates the return provided by the Income fund is perceived as high by the respondent followed by Growth fund and Liquid fund. Conversely the mean value of Large-cap fund is low which indicate that the return provided by the large-cap fund is perceived as low by the respondent.

Table 10: Schemes with Attributes

Scheme/attr	Return	Risk	Liquidity	Safety	Expectations
Index	4.16	3.48	3.99	3.95	3.18
Growth	4.22	3.80	3.92	4.28	3.41
Income	4.35	3.09	4.25	4.29	4.12
Liquid	4.20	3.18	4.18	3.84	3.42
Midcap	4.11	3.22	4.04	3.76	3.23
Large cap	3.89	3.18	3.96	3.93	3.46
Sectoral	4.15	2.95	3.95	4.15	3.30

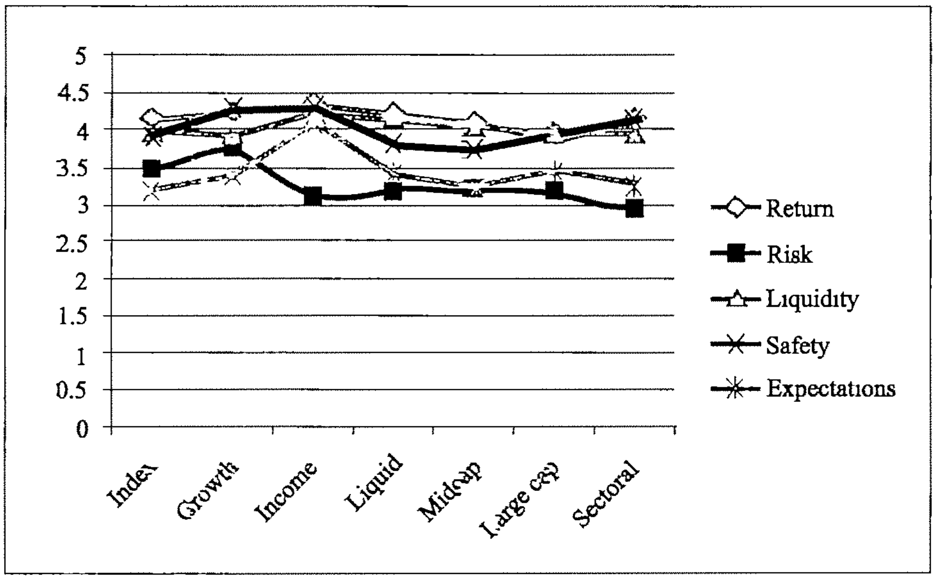

Figure 17: Schemes with Attributes

Many people have accepted that the income fund gives good and attractive return. It gives regular return which makes investor happy. With respect to return people have expressed their happiness for all schemes expect large cap fund. With respect to risk people are satisfied with sectoral fund and income fund and not satisfied with growth fund. From the above figure it is inferred that most of the customer perceives that Income fund is the best scheme in all attributes.

Conclusion

From the study it is found that Income fund is the most preferred fund among the investors. The investors also feel that income fund not only provides regular return but also it is good in safety, liquidity and meeting investor expectations. The scheme preferred varies according to investment experience, family income and number of earning members in the family. The frequency of switching is not very high among investors and the frequency of switching depends upon the scheme invested. The investors have similar perception about mid cap fund and income fund with respect to income. The investors also have similar perception about large cap and sectoral fund schemes with respect to risk. Each scheme varies from each other with respect to liquidity and safety. Mid cap, sectoral, liquid and large cap fund are in the same level in meeting expectation of investors. The investor opinions are similar for safety and liquidity of index fund. The investor's opinion does not vary with respect to liquidity and return of sectoral fund. The perception is similar for return and safety of liquid schemes. For many schemes liquidity is not considered as distinctive feature. Each and every attribute of liquid scheme is significantly distinctive. Hence it can be concluded that features of schemes are not very similar except liquidity. As per perception of investors each scheme is a distinctive with respect to each feature such as return, risk and safety.

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Mutual Fund Industry- Analysis & Recent Trends

Anoop Pandey

The Indian mutual fund industry can now boast on that according to the Association of Mutual Funds in India (AMFI), with the total Asset Under Management (AUM) increasing from Rs.1,01,565 Crores in Jan 2000 to Rs 5,67,601 98 Crores by April 2008, the industry's growth has been nothing but exceptional It has indeed come a long way from being a single player, single scheme (US-64) industry to having 34 players and more than 480 schemes. This research paper covers various aspect of mutual funds industry in India Starting with the basic concept of mutual fund and its advantages it would give detail about the growth of mutual fund industry in India and its present scenario It also throws some light on major mutual fund companies in India, the different types of mutual funds on the basis of structure, investment, load and schemes and also it covers the different phases of growth of mutual fund industry Then it covers the calculation of NAV, the various investment plans, factors that help in calculating the mutual fund performance

Keywords: *AUM, AMC, SEBI, Beta, Alpha, R Squared Treynor Ratio & Sharpe Ratio*

This paper provides better understanding to the reader by giving insights on Indian Mutual Fund Industry through comparative analysis of different Asset Management Companies and their schemes in India. To do a comparative analysis of five major Mutual Funds of India namely:

- Kotak Mutual Fund
- HDFC Mutual Fund
- UTI Mutual Fund
- Reliance Mutual Fund
- Prudential ICICI Mutual Fund

Objective of the Research Paper

Following are the objectives of the study

- To know the awareness of investors about schemes provided by various AMCs
- To understand the risk profile of the customer
- Comparative study of returns given by various AMC Mutual funds on the basis of 6 parameters like Standard Deviation, Beta, Alpha, R Squared, Treynor Ratio & Sharpe Ratio.
- To give a holistic and a comprehensive view of mutual fund industry in India

Methodology

The research design for the present study was basically descriptive and exploratory in nature. The study started with exploratory research design in order to have a deeper insight of the recent trends of mutual fund industry. For the purpose of this research, we have used only secondary data Data was collected from the financial reports of these firms.

In broader perspective the whole Research Paper can be divided into two sections.

Under Section I, on the basis of past and present the industry has been analyzed and based on which future outlook has been projected.

This section covers following things:

- Introduction Concept of Mutual Funds
- Players in the Mutual Fund Industry
- Risk Measurement

Under Section II, focuses on the different tools used to measure & evaluate the performance of different Mutual Funds. This section covers the following things:

- The performance of the Mutual Funds is evaluated on the basis of Standard Deviation, Beta, Alpha, R Squared, Treynor Ratio & Sharpe Ratio.
- Recent Trends in the Mutual Fund industry

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- Impact on Mutual Funds of the Union Budget.

Finally on the basis of findings and observation suitable recommendations will be given only investors point of view.

Limitations of the Research Paper

- The analysis is completely based on the past performance and not confirms the future performance.
- The research is based on secondary data collected from other sources like magazines, newspapers and websites etc.
- Recommendations will be given investors point of view.

Introduction

A Mutual fund is a common pool of money into which investors place their contributions that are to be invested in accordance with a stated objective. The ownership of the fund is thus joint or "mutual"; the fund belongs to all investors. A single investor's ownership of the fund is in the same proportion as the amount of the contribution made by him bears to the total amount of the fund.

The concept of mutual funds in India dates back to the year 1963. The era between 1963 and 1987 marked the existence of only one mutual fund company in India with Rs. 67bn assets under management (AUM), by the end of its monopoly era, the Unit Trust of India (UTI). By the end of the 80s decade, few other mutual fund companies in India took their position in mutual fund market.

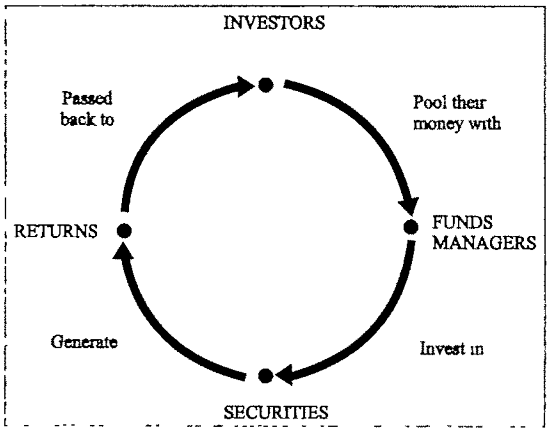
The new entries of mutual fund companies in India were SBI Mutual Fund, Canbank Mutual Fund, Punjab National Bank Mutual Fund, Indian Bank Mutual Fund, Bank of India Mutual Fund.

The succeeding decade showed a new horizon in Indian mutual fund industry. By the end of 1993, the total AUM of the industry was Rs. 470.04 bn. The private sector funds started penetrating the fund families. In the same year the first Mutual Fund Regulations came into existence with re-registering all mutual funds except UTI. The regulations were further given a revised shape in 1996.

Mutual funds normally come out with a number of schemes with different investments objectives which are launched from time to time. A mutual fund is required to be registered with Securities and Exchange Board of India which regulates securities markets before it can collect funds from public.

Each share or unit that an investor holds needs to be assigned a value. Since the units held by investor evidence the ownership of the assets, the value of the total assets of the fund when divided by the total number of units issued by the mutual fund gives us the value of one unit. This is generally called the Net Asset Value (NAV) of one unit or one share. The value of an investor's part ownership is the determined by the NAV of the number of units held.

The flow chart below describes broadly the working of a mutual fund:



Sources: AMFI

The Players in the Mutual Fund Industry

The players in the Indian Mutual Funds Industry are similar to some extent to the players in other financial services industry. The players are as follows:

(i) SEBI

The Securities Exchange Board of India (SEBI) is the regulatory authority for all the mutual funds sponsored by the public/private sector banks, financial institutions, private sector companies, non- banking finance companies and foreign institutional investors. SEBI has laid down the rules and regulations regarding the obligations of the entities involves in a mutual fund, its establishment and launch of different schemes, investments and valuation, financial reporting conduct and operations of mutual funds.

(ii) Asset Management Company (AMC)

Its role is highly significant in the mutual funds operation They are the fund managers i.e. they invest the investors money in various securities after proper research and analysis. They also look after the administrative functions of a mutual fund for which they charge management fee.

(iii) Intermediaries

They act as a link between the mutual fund companies and the investors. The intermediaries include brokers, sub- brokers, and investment houses. The other intermediary- registrar and transfer agents perform activities which are associated with maintaining records concerning units already issued or to be issued by the company. The registrar also performs other activities such as dividend payment, investor grievance, etc.

(iv) Investors

Investors subscribe to the units issued by the mutual funds in the hope of getting a return commensurate with the risk involved. SEBI protects the interest of the investors through the guidelines laid down under SEBI (Disclosure and Investor Protection) Guidelines, 2000. The mutual fund investor mainly includes individual, HUF, corporate and trusts.

What is Risk?

Risk can be defined as the potential for harm. But when anyone analyzing mutual funds uses this term, what is actually being talked about is volatility.

Volatility is nothing but the fluctuation of the Net Asset Value (price of a unit of a fund). If there is high volatility, then there will be greater fluctuations in NAV

Generally, past volatility is taken as an indicator of future risk and for the task of evaluating a mutual fund this is an adequate approximation.

How Risk is Measured?

There are 2 ways in which you can determine how risky a fund is.

Standard Deviation

Standard Deviation is a measure of how much the actual performance of a fund over a period of time deviates from the average performance. Since Standard Deviation is a measure of risk, a low Standard Deviation is good.

Sharpe Ratio

The Sharpe Ratio of a fund measures whether the returns that a fund delivered were commensurate with the kind of volatility it exhibited.

This ratio looks at both, returns and risk, and delivers a single measure that is proportional to the risk adjusted returns.

Since Sharpe Ratio is a measure of risk-adjusted returns, a high Sharpe Ratio is good.

Important Points:

Don't just look at the NAV, also look at the risks-returns

Kotak 30 has 3 stars & Kotak Opportunities has 4 stars. That does not mean that their NAV is approximately the same. In fact, the NAV of Kotak 30 is 90.22 & NAV of Kotak Opportunities is 40.48.

However, Kotak 30 took a below average risk and delivered an above average return, while Kotak Opportunities took an average risk to get the high returns. So, don't just look at the NAV also consider the risks-returns of the fund.

Higher rating does not mean better returns

A fund with more stars does not indicate a higher return when compared with the rest. All it means is that you will get a good return without putting your money at too much risk.

ICICI Prudential Liquid Fund has a 4-star rating while ICICI Prudential Growth Fund has a 3-star rating. However, the fund with the 3-star rating has a higher NAV (109.08) than the one with the 4-star rating (11.73).

Higher rating does not mean more risk

HDFC Top 200 has an NAV of 140.47 while UTI Infrastructure has an NAV of 36.60

This does not necessarily mean that HDFC Top 200 is offering a higher risk since the return is higher.

In fact, according to the ratings, HDFC Top 200, a 5-star fund has a low risk while UTI Infrastructure, a 5-star fund has an average risk.

FUND ANALYSIS (On the basis of NAV)

Fund	Category	Rating	3 Year Return
DSPML T.I.G.E.R. Reg	Equity: Diversified	***	45.64
Tata Infrastructure	Equity. Diversified	***	45.31
Magnum Contra	Equity: Diversified	***	44.80
Kotak Opportunities	Equity: Diversified	***	43.72
UTI Infrastructure	Equity: Diversified	***	43.18
Magnum Multiplier Plus	Equity: Diversified	***	43.05
Reliance Growth	Equity: Diversified	***	42.00
Sundaram BNP Paribas Select Midcap Reg	Equity: Diversified	***	41.06
HDFC Top 200	Equity: Diversified	***	39.65
BoB Growth	Equity: Diversified	***	38.55
Principal Child Benefit	Hybrid: Equity-oriented	***	36.93
Magnum Balanced	Hybrid: Equity-oriented	***	31.37
HDFC Prudence	Hybrid: Equity-oriented	***	29.27
Birla Sun Life Income	Debt: Medium-term	***	8.37
ICICI Prudential Long-...	Debt: Medium-term	***	7.54
Kotak Flexi Debt	Debt: Medium-term	***	7.47
Sundaram BNP Paribas S...	Equity: Diversified	***	44.86
DWS Investment Opportunity	Equity: Diversified	***	44.10
DSPML Equity Fund	Equity: Diversified	***	43.39
ICICI Prudential Dynamic	Equity: Diversified	***	42.69
Kotak 30	Equity: Diversified	***	42.68
DSPML Top 100 Equity Reg	Equity: Diversified	***	42.55
Magnum Equity	Equity: Diversified	***	42.23

Source: http://amfiindia.com (on 8th May, 2008)

Funds which have been compared are as under:

(i) Kotak Mahindra Mutual Fund

Category	**Fund**
Equity Fund Scheme	Kotak 30 – Growth
Debt Fund Scheme	Kotak Bond Short Term
ELSS Tax Saver	Kotak Tax Saver Scheme – Growth
Monthly Income Plan	Kotak Income Plus
Cash Fund	Kotak Liquid Instrument

(ii) HDFC Mutual Fund

Category	**Fund**
Equity Fund Scheme	HDFC Equity Fund- Growth
Debt Fund Scheme	HDFC HI Short Term
ELSS Tax Saver	HDFC Tax Saver Scheme- Growth
Monthly Income Plan	HDFC MIP- Short Term
Cash Fund	HDFC Liquid

(iii) UTI Mutual Fund

Category	**Fund**
Equity Fund Scheme	UTI Equity Fund- Growth
Debt Fund Scheme	UTI Short Term Income Regular
ELSS Tax Saver	UTI ETSP- Growth
Monthly Income Plan	UTI- MIS
Cash Fund	UTI Liquid Cash Instrument

(iv) ICICI Mutual Fund

Category	**Fund**
Equity Fund Scheme	ICICI Prudential Dynamic Plan- Growth
Debt Fund Scheme	ICICI Prudential Short Term
ELSS Tax Saver	ICICI Prudential Tax Plan

Monthly Income Plan	ICICI Prudential MIP
Cash Fund	ICICI Prudential Liquid

(v) Reliance Mutual Fund

Category	Fund
Equity Fund Scheme	Reliance Growth
Debt Fund Scheme	Reliance Short Term
ELSS Tax Saver	Reliance Tax Saver
Monthly Income Plan	Reliance MIP
Cash Fund	Reliance Liquid Cash

Equity Fund Scheme

(i) Kotak 30- Growth

(ii) HDFC Equity Fund- Growth

(iii) UTI Equity Fund- Growth

(iv) ICICI Prudential Dynamic Plan- Growth

(v) Reliance Growth

	Standard Deviation	Sharpe Ratio	Treynor Ratio	Beta	R Square	Alpha
Kotak	25.48	1.39	3.09	.96	.88	4.98
HDFC	23.61	1.34	2.65	.91	.92	2.75
UTI	23.06	1.06	2.13	.88	.89	-3.28
ICICI	25.10	1.43	1.95	.87	.77	7.78
Reliance	27.93	1.29	2.97	.98	.76	4.74

Note: The data is collected on 8th May, 2008

Findings

	Standard Deviation	Sharpe Ratio	Treynor Ratio	Beta	R Square	Alpha	Total
Kotak	4	2	1	4	3	2	16
HDFC	2	3	3	3	1	4	16
UTI	1	5	4	2	2	5	19
ICICI	3	1	5	1	4	1	15
Reliance	5	4	2	5	5	3	24

Analysis

The analysis suggests that in case of standard deviation which is desired to be low so that the fund can perform better, UTI stands out with rank 1 (23.06) & following UTI is HDFC (23.61) which suggest that these funds are stable in their returns.

As the desired level of Beta is low so that the fund return is stable but this is contradiction statement because beta shows the volatility of the stock or fund lower beta means that funds returns are stable but in today's competitive world there is a quote "Higher the risk higher the return" if we go by this we need to have a high value of beta. this also depends upon the risk appetitive of the investor if he is aggressive investor he would want his fund beta to be high but the case is entirely different in case of risk averse investor but as these funds are managed by professionals so we would be giving 1st rank to that fund which has lowest beta value . In this case also ICICI Prudential Dynamic Plan has lowest beta (.87) among these funds which is followed by UTI Equity Fund- Growth (.88). But beta of 1 is preferable because of the returns it is considered safe for the value of 1 in this analysis almost most of the funds have beta of less than 1 which means that these funds are managed in keeping the people risk at a manageable level, which help investors to earn safe returns. As we have to do the analysis we have to take one stand so in this case, according to me 1st rank should be given to that beta value which is lowest.

Higher R Square means a well diversified portfolio. So, HDFC Equity Growth fund has the maximum R Square (.92) followed by UTI Equity Growth fund (.89).

In the case of Sharpe ratio ICICI Prudential Growth fund (1.43) stands out clear with 1st rank, followed by Kotak 30 Growth fund (1.39).

In case of Treynor ratio, Kotak 30 Growth fund (3.09) value is higher so it has been given the 1st rank among the others which is followed by Reliance Equity fund (2.97).

Alpha indicates the superior performance of the fund. If the alpha is positive the fund has performed better and if the alpha is negative the fund has not performed upto the benchmark. When Alpha is considered, ICICI Prudential Dynamic Growth Plan (7.78) is the best followed by Kotak-30 Growth fund (4.98).

Thus, ICICI Prudential Dynamic Growth Plan is the best Equity fund for the investor for investment purpose. It is the best fund as far as Alpha, Beta & Sharpe ratio is concerned. Though R Square is not so convincing which means that the fund is not so diversified. It stands at 3rd position in Standard Deviation after UTI Equity Growth fund & HDFC Equity Growth fund and last when Treynor ratio is considered. But when we combine all the 6 parameters which are considered to measure the performance of a Mutual Fund, ICICI Prudential Dynamic Growth Plan is the best Equity Fund when compared with rest of the Equity funds.

Debt Fund Scheme

(i) Kotak Bond Short Term

(ii) HDFC HI Short Term

(iii) UTI Short Term Income Regular

(iv) ICICI Prudential Short Term

(v) Reliance Short Term

	Standard Deviation	Sharpe Ratio	Treynor Ratio	Beta	R Square	Alpha
Kotak	.59	5.30	3.42	.48	.55	2.27
HDFC	.52	7.10	3.11	.42	.54	2.95
UTI	.66	2.53	2.87	.51	.49	.77
ICICI	.85	3.01	2.56	.62	.44	1.45
Reliance	.54	6.55	2.98	.46	59	2.72

Note: The data is collected on 8th May, 2008

Findings

	Standard Deviation	Sharpe Ratio	Treynor Ratio	Beta	R Square	Alpha	Total
Kotak	3	3	1	3	2	3	15
HDFC	1	1	2	1	3	1	9
UTI	4	5	4	4	4	5	26
ICICI	5	4	5	5	5	4	28
Reliance	2	2	3	2	1	2	12

Analysis

The analysis suggests that in case of standard deviation which is desired to be low so that the fund can perform better, HDFC HI Short Term stands out with rank 1 (.52) & following HDFC HI is Reliance Short Term fund (.54) which suggest that these funds are stable in their returns & also are less risky.

As the desired level of Beta is low so that the fund return is stable but this is contradiction statement because beta shows the volatility of the stock or fund lower beta means that funds returns are stable but in today's competitive world there is a quote "Higher the risk higher the return" if we go by this we need to have a high value of beta. this also depends upon the risk appetitive of the investor if he is aggressive investor he would want his fund beta to be high but the case is entirely different in case of risk averse investor but as these funds are managed by professionals so we would be giving 1st rank to that fund which has lowest beta value . In this case also HDFC HI Short Term has lowest beta (.42) among these funds which is followed by Reliance Short Term fund (.46). But beta of 1 is preferable because of the returns it is considered safe for the value of 1 in this analysis almost most of the funds have beta of less than 1 which means that these funds are managed in keeping the people risk at a manageable level, which help investors to earn safe returns As we have to do the analysis we have to take one stand so in this case, according to me 1st rank should be given to that beta value which is lowest.

Higher R Square means a well diversified portfolio. So, Reliance Short Term fund has the maximum R Square (.59) followed by Kotak Bond Short Term (.55). HDFC HI Short term fund is on the 3rd place (.54).

In the case of Sharpe ratio HDFC HI Short Term fund (7.10) stands out clear with 1st rank, followed by Reliance Short Term fund (6.55)

In case of Treynor ratio, Kotak Bond Short Term fund (3.42) value is higher so it has been given the 1st rank among the others which is followed by HDFC HI Short Term fund (3.11).

Alpha indicates the superior performance of the fund. If the alpha is positive the fund has performed better and if the alpha is negative the fund has not performed upto the benchmark.

When Alpha is considered, HDFC HI Short Term fund (2.95) is the best followed by Reliance Short Term fund (2.72).

Thus, HDFC HI Short Term fund is the best Debt fund when compared with the other funds of Kotak, ICICI, UTI & Reliance. It has the smallest Standard Deviation & also the smallest Beta when compared with all the funds. This shows the fund is less risky and will give good returns to its investors. When taken R Square into consideration, this fund stands at the 3rd position after Kotak Bond Short Term & Reliance Short Term. This shows that the fund is less diversified. The fund is the best performer as far as Sharpe ratio is concerned and is the 2nd best when Treynor ratio is considered. The fund is a good performer as it has the highest Alpha. So, if a person wants to invest in Debt for a short term then he can go in for HDFC HI Short Term fund.

ELSS Tax Saver Fund

(i) Kotak Tax Saver Scheme- Growth

(ii) HDFC Tax Saver Scheme- Growth

(iii) UTI ETSP- Growth

(iv) ICICI Prudential Tax Plan

(v) Reliance Tax Saver

	Standard Deviation	Sharpe Ratio	Treynor Ratio	Beta	R Square	Alpha
Kotak	25.65	.76	1.41	.96	.78	-4.55
HDFC	25.22	1.05	1.93	.92	.84	-3.11
UTI	24.49	.91	1.94	.96	.86	-7.11
ICICI	29.02	.90	1.80	.94	.66	-4.04
Reliance	27.54	.86	1.62	1.03	.61	-5.32

Note: The data is collected on 8th May, 2008

Findings

	Standard Deviation	Sharpe Ratio	Treynor Ratio	Beta	R Square	Alpha	Total
Kotak	3	5	5	3 5	3	3	22.5
HDFC	2	1	2	1	2	1	9
UTI	1	2	1	3.5	1	5	13.5
ICICI	5	3	3	2	4	2	19
Reliance	4	4	4	5	5	4	26

Analysis

The analysis suggests that in case of standard deviation which is desired to be low so that the fund can perform better, UTI ETSP- Growth fund stands out with rank 1 (24.49) followed by HDFC Tax Saver Scheme-Growth fund (25.22) which suggest that these funds are stable in their returns & also are less risky.

As the desired level of Beta is low so that the fund return is stable but this is contradiction statement because beta shows the volatility of the stock or fund lower beta means that funds returns are stable but in today's competitive world there is a quote "Higher the risk higher the return" if we go by this we need to have a high value of beta. this also depends upon the risk appetitive of the investor if he is aggressive investor he would want his fund beta to be high but the case is entirely different in case of risk averse investor but as these funds are managed by professionals so we would be giving 1st rank to that fund which has lowest beta value. In this case also HDFC Tax Saver Scheme Fund has lowest beta (.92) among these funds which is followed by ICICI Prudential Tax Plan (.94). But beta of 1 is preferable because of the returns it is considered safe for the value of 1 in this analysis almost most of the funds have beta of less than 1 which means that these funds are managed in keeping the people risk at a manageable level, which help investors to earn safe returns and in this case beta is approximately equal to 1. As we have to do the analysis we have to take one stand so in this case, according to me 1st rank should be given to that beta value which is lowest.

Higher R Square means a well diversified portfolio. So, UTI ETSP-Growth fund has the maximum R Square (.86) followed by HDFC Tax Saver Scheme-Growth Fund (.84)

In case of Sharpe Ratio, an HDFC Tax Saver Scheme-Growth fund (1.05) stand out clear with 1st rank, followed by UTI ETSP Growth fund (.91) & just next is ICICI Prudential Tax Plan (.90).

In case of Treynor ratio, it is the just the opposite of Sharpe Ratio, UTI ETSP Growth fund (1.94) value is higher so it has been given the 1st rank among the others which is followed by HDFC Tax Saver Scheme fund (1.93).

Alpha indicates the superior performance of the fund. If the alpha is positive the fund has performed better and if the alpha is negative the fund has not performed up to the benchmark.

When Alpha is considered, all the funds have a negative figure which means that all the funds are not performing good. But, when compared among these 5 funds HDFC Tax Saver Scheme (-3.11) is the best followed by ICICI Prudential Tax Plan (-4.04).

Thus, HDFC Tax Saver Scheme is the best Tax Saver Fund. It stands 2nd in case of Standard Deviation after UTI ETSP Growth Fund and is the best fund when Beta is compared followed by ICICI Prudential Tax Plan As far as R Square is considered it stands at 2nd position after UTI ETSP Growth Fund. It is again the best when we consider the Sharpe Ratio. Though all the funds are showing a negative figure when alpha is compared but again it is the best as far as these 5 funds are compared. So, if we keep all the 6 parameters in mind the investor should be advised to invest in HDFC Tax Saver Scheme.

Monthly Income Plans (MIP)

(i) Kotak Income Plus

(ii) HDFC MIP- Short Term

(iii) UTI- MIS

(iv) ICICI Prudential MIP

(v) Reliance MIP

	Standard Deviation	Sharpe Ratio	Treynor Ratio	Beta	R Square	Alpha
Kotak	5.63	.28	4.04	.20	.69	2.70
HDFC	4.24	-.07	2.97	.17	.81	1.67
UTI	4.18	.76	3.65	.22	.55	2.34
ICICI	4.48	.47	4.71	.18	.71	3.13
Reliance	5.50	-.25	3.03	.15	.63	2.02

Note: The data is collected on 8th May, 2008

Findings

	Standard Deviation	Sharpe Ratio	Treynor Ratio	Beta	R Square	Alpha	Total
Kotak	5	3	2	4	3	2	19
HDFC	2	4	5	2	1	5	19
UTI	1	1	3	5	5	3	18
ICICI	3	2	1	3	2	1	12
Reliance	4	5	4	1	4	4	22

Analysis

The analysis suggests that in case of standard deviation which is desired to be low so that the fund can perform better, UTI stands out with rank 1 (4.18) & following UTI is HDFC (4.24) which suggest that these funds are stable in their returns.

As the desired level of Beta is low so that the fund return is stable but this is contradiction statement because beta shows the volatility of the stock or fund lower beta means that funds returns are stable but in today's competitive world there is a quote "Higher the risk higher the return" if we go by this we need to have a high value of beta. this also depends upon the risk appetitive of the investor if he is aggressive investor he would want his fund beta to be high but the case is entirely different in case of risk averse investor but as these funds are managed by professionals so we would be giving 1st rank to that fund which has lowest beta value . In this case also Reliance MIP has lowest beta (.87) among these funds which is followed by HDFC MIP- Short term (.88). But beta of 1 is preferable because of the returns it is considered safe for the value of 1 in this analysis almost most of the funds have beta of less than 1 which means that these funds are managed in keeping the people risk at a manageable level, which help investors to earn safe returns. As we have to do the analysis we have to take one stand so in this case, according to me 1st rank should be given to that beta value which is lowest.

Higher R Square means a well diversified portfolio. So, HDFC MIP- short Term fund has the maximum R Square (.81) followed by ICICI Prudential MIP fund (.71).

But the analysis can't be done on these two parameters. Standard deviation measures total risk and this is the case with a single portfolio so we have also considered ratios which are quite important for mutual funds analysis like Sharpe ratio & Treynor ratio.

In the case of Sharpe ratio UTI MIP fund (.76) stands out clear with 1st rank, followed by ICICI Prudential MIP fund (.47). HDFC MIP & Reliance MIP have negative Sharpe ratio.

In case of Treynor ratio, ICICI Prudential MIP (4.71) value is higher so it has been given the 1st rank among the others which is followed by Kotak Income Plus fund (4.04).

In case of Alpha ICICI MIP (3.13) is the best fund followed by Kotak Income Plus (2.70) & UTI MIS (2.34) in the third place.

ICICI Prudential MIP is recommended to the investors. ICICI is the 3rd highest in standard deviation after UTI MIS fund and HDFC MIP fund. It is also 3rd as far as beta of the fund is considered after Reliance MIP & HDFC MIP- Short Term. It is 2nd best in Sharpe ratio after UTI MIS and it is the best in Treynor ratio followed by Kotak Income plus. ICICI Prudential MIP should be considered by the investors. Also ICICI Prudential MIP is the best fund when Alpha is considered. But, if the investor wants to take less risk then he can go in for HDFC MIP- Short Term fund as this fund is 2md best in both Standard Deviation & Beta. But, after considering all the 6 parameters ICICI Prudential MIP is the best fund.

Cash Funds

(i) Kotak Liquid Instrument

(ii) HDFC Liquid

(iii) UTI Liquid Cash Instrument

(iv) ICICI Prudential Liquid

(v) Reliance Liquid Cash

	Standard Deviation	Sharpe Ratio	Treynor Ratio	Beta	R Square	Alpha
Kotak	.12	17.20	159.89	.10	.20	1.84
HDFC	.15	16.91	154.23	.13	.23	2.24
UTI	.15	16.40	152.66	.09	.10	1.98
ICICI	.14	15.91	157.78	.15	.33	1.98
Reliance	.38	1.44	121.79	.30	.17	.03

Note: The data is collected on 8th May, 2008

Findings

	Standard Deviation	Sharpe Ratio	Treynor Ratio	Beta	R Square	Alpha	Total
Kotak	1	1	1	2	3	4	12
HDFC	3.5	2	3	3	2	1	14.5
UTI	3.5	3	4	1	5	2.5	19
ICICI	2	4	2	4	1	2.5	15.5
Reliance	5	5	5	5	4	5	29

Analysis

The analysis suggests that in case of standard deviation which is desired to be low so that the fund can perform better, Kotak Liquid Instrument stands out with rank 1 (.12) & ICICI Prudential Liquid (.14) which suggest that these funds are stable in their returns. HDFC Liquid & UTI Liquid Cash Instrument shares the 3rd position as they both have the same standard deviation.

As the desired level of Beta is low so that the fund return is stable but this is contradiction statement because beta shows the volatility of the stock or fund lower beta means that funds returns are stable but in today's competitive world there is a quote "Higher the risk higher the return" if we go by this we need to have a high value of beta. this also depends upon the risk appetitive of the investor if he is aggressive investor he would want his fund beta to be high but the case is entirely different in case of risk averse investor but as these funds are managed by professionals so we would be giving 1st rank to that fund which has lowest beta value . In this case also UTI Liquid Cash Instrument has lowest beta (.09) among these funds which is followed by Kotak Liquid Instrument (.10). But beta of 1 is preferable because of the returns it is considered safe for the value of 1 in this analysis almost most of the funds have beta of less than 1 which means that these funds are managed in keeping the people risk at a manageable level, which help investors to earn safe returns. But in this case, beta of all the funds is much below than 1. As we have to do the analysis we have to take one stand so in this case, according to me 1st rank should be given to that beta value which is lowest.

Higher R Square means a well diversified portfolio. So, ICICI Liquid Cash Instrument fund has the maximum R Square (.33) followed by HDFC Liquid fund (.23).

Sharpe ratio represents this trade-off between risk and returns. A higher Sharpe ratio is therefore better as it represents a higher return generated per unit of risk. Sharpe ratio provides an unbiased look into fund's performance.

In the case of Sharpe ratio Kotak Liquid Instrument fund (17.20) stands out clear with 1st rank, followed by HDFC Liquid fund (16.91).

In case of Treynor ratio, Kotak Liquid Instrument fund (169.89) value is higher so it has been given the 1st rank among the others which is followed by ICICI Prudential Liquid fund (157.78).

Alpha indicates the superior performance of the fund. If the alpha is positive the fund has performed better and if the alpha is negative the fund has not performed upto the benchmark.

When Alpha is considered, HDFC Liquid fund (2.24) followed by UTI Liquid Cash Instrument (1.98) & ICICI Prudential Liquid fund (1.98) each.

Kotak Liquid Instrument fund is recommended to all the investors as it has the least standard deviation i.e. the risk is least as compared to all other mutual funds. Beta is also 2nd lowest just after UTI Liquid Cash Instrument and is also very close as it has the beta of (.10) and UTI Liquid Cash instrument has of (.09). When compared the Sharpe ratio & the Treynor ratio, Kotak Liquid Instrument has the highest ratio. Though it is the 3rd best in R Square i.e. it is less diversified as compared to ICICI Prudential Liquid & HDFC Liquid. Keeping in mind all the 6 parameters, Kotak Liquid instrument fund is the best Cash Fund when compared with rest of the cash funds.

Conclusion of the Research Paper

After analyzing the mutual funds under 5 categories like Equity based, Debt based, ELSS Tax Saving, Monthly Income Plans & Cash funds under 6 parameters like Standard deviation, Beta, Alpha, R Squared, Treynor Ratio & Sharpe Ratio, I have come to a conclusion that there are different funds which are performing best under different categories. No fund is the best in all the categories.

Category	**Fund**
Equity Fund Scheme	ICICI Prudential Dynamic Plan- Growth
Debt Fund Scheme	HDFC HI- Short Term
ELSS Tax Saver	HDFC Tax Saver Scheme
Monthly Income Plan	ICICI Prudential MIP
Cash Fund	Kotak Liquid Instrument

So, it can be seen that ICICI Prudential is the best in Equity Fund Scheme & Monthly Income Plan but HDFC is the best in Debt Fund Scheme & ELSS Tax Saver Scheme. Kotak is the best in Cash Fund & when the NAV of past 3 years is compared T.I.G.E.R. fund is the best fund with a NAV of 45.64 and among these 5 funds Kotak Opportunities is the best fund with an NAV of 43.72 of the past 3 years.

Investors have added to their portfolios well-managed diversified equity funds with proven track records over longer time frames. On the basis of the performance of diversified equity funds and how domestic markets are placed, risk-taking investors would do well, who hold a larger portion of their portfolio in actively managed diversified equity funds.

Recommendations

(i) Diversify

- One should diversify the investments between a few funds (the actual number depends entirely on the amount of investment). This strategy ensures that the portfolio is not dependent on the performance of one single fund. However, one needs to avoid over-diversification as that would achieve nothing.
- Investor can also plan like one mutual fund of diversified equity plan second mutual fund of balanced type and third one you can plan of debt type etc. In this manner the money will get diversified, risk is reduced and the investor will get excellent profit.
- ***For Example:*** Rs 20,000 per month, it would be wise to opt for a maximum of three funds. Consider well rated large-cap funds, mid-cap funds and a balanced fund. The latter would provide the debt component and reduce the portfolio's downside risk.

(ii) Don't just judge a fund by its NAV

- Never judge a fund on the basis of its NAV. Also have a look at the Standard Deviation, Beta, Alpha, R Squared, Treynor & Sharpe Ratios & also its performance in the bear and the bull phase, and then invest in it. Only judging a fund by its NAV, is irrelevant while selecting the fund as it is the percentage gain or loss that matters.
- Also look for past returns, dividend etc. the mutual fund has declared. If the investor has chosen equity or stock market related mutual fund, then he may go for SIP (Systematic Investment Plan) method. A risk adverse investor should avoid investing in the Sectoral funds.

(iii) New Fund Offer (NFO), a marketing device

- AMC's use NFOs to create excitement and push their funds. These schemes are launched because they are easy avenues to capture management fees and increase the fund house's asset base. These schemes are usually just clones of existing schemes, but with new peppy names flaunted to attract investors.

- It is important for investors to understand that NFOs are merely marketing devices. There are a number of existing funds that have proved their mettle and investors should opt for them because they have a track record.

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Implementation of TQM: A Case Study in an Auto Company

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This case study has been carried on Total Quality Management (TQM) implementation in an auto company. The XYZ auto company is producing auto parts and components to large scale auto companies producing the various automotive vehicles XYZ Auto Company is the best and tier one supplier to about 3 companies and their branches located in different places. This XYZ auto company is already an ISO 9000 certified company and planning to implement the TQM philosophy and best practicing the TQM tools and techniques in the company The top management already identified a quality team comprises distinguished members from the different departments including design marketing, HR, production, purchase, suppliers, industrial engineering and quality etc, the team is called as TQM implementation team Expected results after TQM implementation are improved quality of supplies, improved quality of processes, improved employee satisfaction and improved customer satisfaction. In this case study, it was found that need of TQM training is very essential for the employees in the company to get in to the TQM implementation process.

Keywords: *Total Quality Management, Critical Success Factors Soft Elements of TQM, Hard Elements of TQM, TQM Framework, Manufacturing Excellence and Quality Improvement Awards*

Introduction

The industrial world is becoming competitive and competitive in multiple times. There fore industries should become world class by performing excellence in manufacturing goods and should provide excellence in services. In these highly competitive markets the products and services produced are not simply sold. The industries should have the managerial and marketing philosophies to sell the goods and services The important philosophy is TQM and its principles such as quality, quality of products, quality of services, quality of processes, quality of suppliers, quality of maintenance, quality of employees and their involvement etc . The over all management of quality in the industries starting from suppliers to customers or end users is known as Total Quality Management (TQM).

Total quality management is also defined as a management philosophy, aims to maintain the standard qualities in procuring raw materials, able to manage the standard qualities in manufacturing processes, able to produce the standard quality of goods, able to manage the quality in logistics and distribution processes, finally able to satisfy the distributors and end customers with their excellent quality of products and services. Quality management deals with the processes, products, services and initiates the innovations in the company to satisfy the customers. Quality management is concern for producing the excellent products having high quality and durability. TQM is applicable to beyond the boundaries of the company. It includes suppliers, supplier's suppliers, logistics providers, distributors, dealers, customers and end users. TQM tries to enhance the quality of each and every process of quality chain. TQM involves each and every person in the manufacturing and quality chain to take part in solving the problems and improving the quality of products and services continuously. TQM starts its innovativeness from suppliers quality management systems, supplier identification and supplier development processes, suppliers certification processes to get the quality of input materials, such as raw materials, parts with required quality at required time. Suppliers plays important role in supplying the quality of inputs to the manufacturers. Suppliers participate in the new product development process along with the manufacturers to have the knowledge about the product requirements and manufacturer quality requirements.

The case study conducted by interview method by asking various prior designed questions on critical success factors (CSF's) of TQM with top management

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and middle management of the company. Finally the case study completed in a systematic and structured manner and got the fruitful results of the case study.

Literature Review

TQM is the process of practicing the quality tools and techniques to improve the quality of processes and products continuously. Continuous improvement practices increases the quality of products and satisfies the customers. Any auto company serves more number of customers, so the understanding of customer requirements is a factor of TQM and it helps in finding the updated customer needs. The best practices of organisational culture values positively impacted the critical success factors of TQM and improved the quality, performance of hospital services and improved the client's satisfaction (Kaluarachchi, 2010). In a case study (Katerina and George, 2007) it was found that, the ISO 9000 certification influences the organisational performance and further practices of TQM will enhance the growth in quality and gained manufacturing excellence awards. Henrik and Rickard (2005) conducted a case study to know the effectiveness of participating in quality award processes. Found that participation in quality award process strengthened their quality improvement process and gained quality awards. Benchmarking practices is one of the TQM techniques, practiced in a case study (Simmy and Zairi, 2008) suggested that benchmarking visits are a cost to business and should therefore be designed and executed with outmost care to achieve desired outcomes. Kiran et al., (1995), through their theoretical studies said that joint implementation of JIT and TQM in the industries are outperforming in improving the quality of products and processes as well as customer satisfaction. Keng boon Ooi et al., (2006) conducted case study to know the propensity of employees to stay in the TQM Company. It was found that by proper training the employees on TQM elements, there is no chance of leaving employees from the existing company due to the TQM implementation process. Zairi (1994) conducted same case studies at different company's ranges from auto manufacturing, Xerox companies to service organisation etc; on leadership role in TQM implementation process. Found that the strong leadership practices helped the various organisation in improving the quality and performance, through successfully implementing TQM. Roslina and James (2009) conducted a case study at XYZ company to identify CSF's and problem faced during the ISO 9000 certification maintenance process for its sustainability. The problems avoided through best practices of TQM such as the committed leadership of top management changed the OC, attitudes, behaviour of the employees through various supportive actions such as training, team building, suggestion schemes and reward systems. This case study suggested that by identifying and best performing the CSF's of TQM will helps in solving the problems and improves the sustainability of ISO 9000 certification maintenance process. Christos and Evagelos, (2009) conducted a case study of industries at Greek to know the level of usage of TQM tools and technique and to know the level of training given to the employees to improve their quality performances. Most of the Greek industries (manufacturing, service and corporate) are small in size, having ISO 9000 certification were enthusiastically practicing TQM tools and techniques and training their employees on TQM philosophy to enhance their productivity and improve their quality of products and processes. These small industries are not only practicing simple TQM tools but also advanced TQM tools and techniques such as QFD, DOE etc; to gain the competitive edge and customer satisfaction. Hsuan-Kai Chen et al., (2004) conducted a case study at Taiwan pharmaceutical industries to implement the TQM philosophy. With an exhaustive literature survey they have identified CSF's and TQM tools and techniques practiced effectively and implemented successfully. During the implementation process they faced the various barriers such as lack of management support, lack of cooperation between the employees, lack of understanding teambuilding approach etc. The pharmaceutical industries are successfully implemented TQM and gained competitive strength, increased productivity, reduced quality costs and increased sale and profits. With these extensive literature studies it was found that implementation of TQM elements plays vital role in gaining the competitive edge and customer satisfaction.

Gaps observed in the literature and fill those gaps through this case study:

- Most of the case studies have been conducted outside countries and have showed the positive results on TQM implementation process.

- There is a need of Indian industries should give importance to TQM philosophy and its implementation process, specifically in the auto industries.
- Specific TQM frameworks for auto companies are limited in the literature.
    - Designed a specific TQM framework for Indian auto companies through this case study work at an XYZ company.
- Mainly the lack of knowledge on CSF's of TQM and its positive impact on organisational performances by Indian auto industries.
    - Designed a framework comprises of different CSF's of TQM through this case study.
- Lack of confidence on TQM benefits by the top management of the companies.
- Lack of training on TQM tools and techniques
- Lack of improving customer satisfaction methods in the companies.
    - Used training methodology to gain the confidence on TQM philosophy and its implementation benefits.

About the Company

XYZ auto-company is having more than 1000 employees all together. It is located in one of the state capitals of India. It has a quality department headed by Sr. manager and having managers, engineers, supervisors and inspection operators and altogether 100 employees in the quality department. The quality department has its sub departments in all manufacturing shop floors. Such as quality sub dept. in press shop, machine shop, polishing and assembly etc.

Quality team work towards minimising the defect part flow rate from one shop floor to the shop floor by conducting intermittent inspection of processes, product dimensions and specifications. Periodical inspection reports were developed and sent to the Sr. Management and Top management. Continuous monitoring of processes, machinery and products enhances the satisfaction level of all the employees, management and finally the customers. The quality team of the company works towards, achieving the zero defect policy by implementing and best practicing TQM tools and techniques.

Head of the **Department** of quality conducts meetings with other dept. Sr. Managers and Managers about the quality improvement processes, quality tools to be utilised by the shop floor levels, the importance of quality tools and their effectiveness on the quality improvement of products and processes. He also discusses about the support and requirements if any needed by the manufacturing team to gain the skills and knowledge about the TQM tools and techniques and their practices.

Head of the Department of the quality also conducts the brain storming sessions for quality improvement in all the processes starting from supplier inputs, manufacturing processes, products, policies, customer satisfaction principles and methods. In this brain storming session all the specific field experts will be participated in conducive environment to get the solid inputs to the quality improvement and quality development processes. The suggested and finalised minutes of meeting will be sent to the members of the committee and top management. After getting the feedback and suggestions from the top management the development process will be initiated by the quality department.

TQM Framework and Implementation Plan

One of the **outcomes** of the brainstorming session was TQM implementation in the company. The specific field or critical areas of TQM have been identified in the brainstorming sessions. The identified areas also known as critical success factors (CSF's) of TQM. These factors also again classified as "Soft elements of TQM" and "Hard elements of TQM" The soft elements are human and cultural development activities for understand about the TQM and tries to support the TQM implementation process. The hard elements are to be best practiced and performed during the TQM implementation process. With this understanding about TQM elements, designed a TQM framework (figure 1) for this case company according to the company requirements and policy. The framework comprises of various factors having great value according to the literature studies. In most of the literature and also in the company brain storming session identified factors of TQM are to be implemented and best practiced for gaining the manufacturing excellence, improving the quality and productivity.

The TQM framework CSF's are as follows:

- Top management support.
- Supplier quality improvement (input materials quality)
- Leadership development
- Manufacturing process management (products quality)
- Training and involvement of employees
- TQM tools and techniques
- Customer satisfaction (Output products quality)

These CSF's have been further divided in to soft and hard TQM elements for the ease of understanding and implementation purpose.

Soft TQM Elements

- Top management support
- Leadership development
- Training and involvement of employees

Hard TQM Elements

- Supplier quality improvement
- Manufacturing process management
- TQM tools and techniques
- Customer satisfaction

With the above factors a simple TQM framework has been framed to better understanding and best practising to gain the manufacturing quality excellence awards has been shown in the figure 1: In the case study process the following questions have been asked with responsible top management and middle management team.

Top Management Support for TQM Framework to be Implemented

Top management of XYZ Company **is comprised** of Management Director, Executive Director, GM's, DGM's of different departments. Top management also conducted a meeting to discuss the proposed TQM model to be implemented. Positive direction

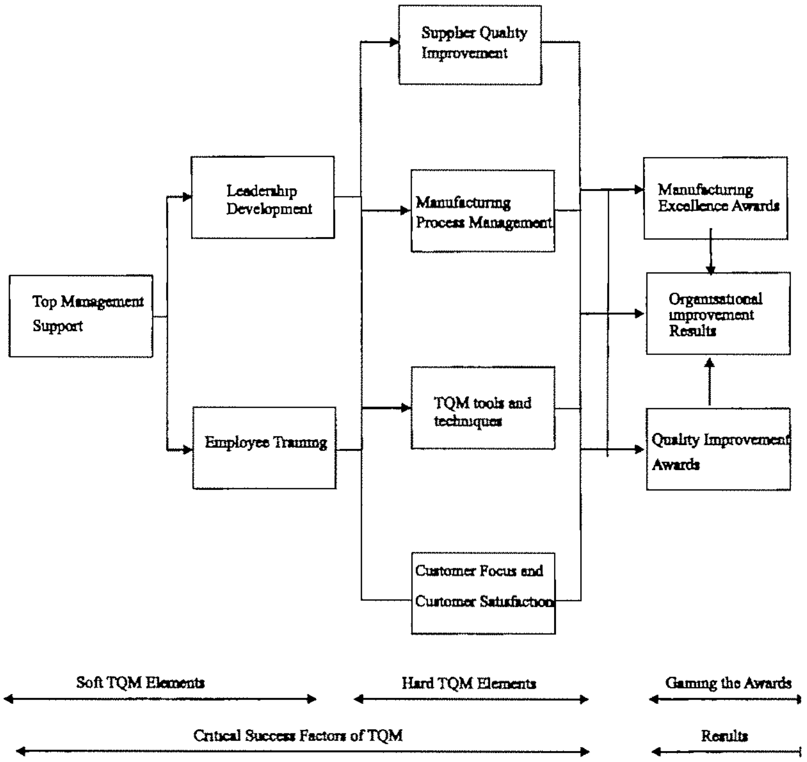
Supplier Quality Improvement
Leadership Development
Manufacturing Process Management
Manufacturing Excellence Awards
Top Management Support
Organisational improvement Results
TQM tools and techniques
Employee Training
Quality Improvement Awards
Customer Focus and Customer Satisfaction
Soft TQM Elements
Hard TQM Elements
Gaining the Awards
Critical Success Factors of TQM
Results

Figure 1: A TQM Model for the Gaining Awards

came from the top management meeting and accepted to support the proposed model or framework. Top management has taken the decision to implement the proposed model. Top management nominated some names of managers, engineers, supervisors and employees to form a quality circle or TQM implementation team headed by a head of the dept. of quality. Top management has assured to support in all respects to implement the TQM excellence model successfully. The top management suggested to provide the development report every week end by the leader of the TQM team. The TQM implementation team head accepted the responsibility and planned to start the work of TQM implementation process.

Leadership Development Programme for TQM Team Members

In this leadership development programme, the TQM team planned to take the training on TQM implementation process and roles to be played by the leaders during the TQM implementation. The team has been undergone training in two phase. In first phase the training took place at the institute where the theoretical training and software package training will be given Some of the leadership activities, behavioural aspects and cultural aspects to be improved by the leaders also covered in this training. The second phase of training was took place at already TQM implemented company Where the training was took place to know the barriers, problems, bottlenecks faced by the industry and also how they have been rectified Most of the Sr Managers of the industry took training classes and shared their experiences, like resistance from the employees, lack of resources, lack of middle management support etc; have been covered. The following questions have been cleared during the training process:

(i) What types of TQM tools and techniques have to be implemented?

(ii) Which type of software packages they are using to improve the quality of process?

In this training and development process, they spared two days especially for the leadership improvement programme. The leaders have been given training on the roles to be played by the leaders, how to motivate the employees, how to involve the employees in problem solving techniques and how to participate actively in productivity and performance improvement etc; How to reduce the bossism or old leadership of autocratic behaviour of the managers and how to improve the cooperative leadership skills have been explained very well with some case examples. With these two phases of training and development the TQM team has been gained the knowledge and skills in:

- TQM tools and techniques
- Software utilised in quality improvement
- Leadership roles to be played
- TQM implementation procedures
- Changed managerial behaviours etc.

Training and Involvement of Employees in TQM Implementation Process

The training was given to all the employees on TQM procedures, tools, techniques, quality monitoring systems and explained the advantages of TQM implementation processes. Training also emphasized on the satisfaction of internal and external customers. In the training process specific training has been given to the employees to actively participate in problem solving skills and continuous quality improvement processes. Some of the employees, who are working in quality dept., were given specialised training in data collection, data analysis and carrying out statistical process control techniques. In the TQM implementation training employees have been motivated to learn cooperative working, take individual responsibilities and learn safety habits and changed working habits. The TQM implementation process motivated the employees to participate in suggestion scheme through filled in format. The recognised employees have been given training on conducting DOE and SPC techniques to improve the standards of product specifications.

Suppliers Quality Improvement Measures

The costs of input materials (raw materials) are more than the operational costs in the industry. So, the quality of input materials considered as highly important to the company. Supplier quality improvement process plays very important role in reducing the quality costs and improving the quality of input materials. Supplier quality may be improved by the **following methods:**

- Involving the suppliers in the new product development process
- Training the suppliers on the quality systems
- Frequent visits to the suppliers companies
- Financial and technical support to implement TQM
- Timely payments to suppliers
- Transference in information sharing

Some of the nearest and reliable suppliers will be continuously helped by providing technical guidance to produce the goods to conformance to requirements. The suppliers are also supported to best practice the TQM tools and techniques, such as histogram, perato diagram, control charts, cause and effect diagram to eliminate the cause of variations in the manufacturing processes. By developing and maintaining long term relationships with suppliers, frequent deliveries, improved quality and reduced cost of input materials has been achieved in the company.

Manufacturing Process Management Measures for Quality Improvement

Managing the processes to the required levels leads to produce improved quality of products, optimum utilisation of quality tools to reduced percentage of rejection levels, reduced percentage of rework levels, minimise wastage, improved satisfaction of employees, improved employee productivity and so on. The company TQM team decided to implement the manufacturing process management technique to gain the manufacturing excellence awards. The main functions of manufacturing process management are:

- Process planning
- Process design
- Process control
- Process measurement

Always the TQM team followed the process planning procedure to produce any product. Processes are planned to produce optimally with required quality. A good process design helps in reducing the process defects. A systematic approach for process planning is essential for achieving the process goals. That is planning the processes, design the processes, control the processes and measure the processes systematically to produce the products with specified quality standards. Close control of processes are achieved by continuously measuring the process variations and make the adjustments in the processes if any variations are falling outside the controlling limits. TQM tools and techniques, such as SPC and preventive maintenance techniques have been extensively utilised to improve the process quality and improve the machine efficiency.

Best Practices of TQM Tools and Techniques to Improve the Quality of Processes and Products Continuously

During management development and employee training programme all the managers and employees have been given training on the TQM tools and techniques. Now these tools and techniques have to be practiced in the manufacturing quality improvement process. Most of the TQM tools and techniques observed in the literature are as follows:

- Statistical quality control
- Statistical process control
- Control charts
- Data collection and analysis
- Histogram
- Pareto charts
- Stratification diagram
- Scatter plots
- Cause and effect diagram
- FMEA
- Benchmarking

These tools and techniques are utilised to control the process quality, product quality, quality of cutting tools, raw materials quality and to achieve the benchmark standards etc;. By best practicing these tools and techniques systematically the products produced met the customer requirements and satisfied the customers. The benchmarking process is also one of the TQM techniques to improve the quality and improve the production targets. In the auto company the benchmarking practices are properly implemented to enhance the technology up gradation, increase production capabilities, to improve quality standards and to satisfy the end customers with innovative products.

Customer Focus and Customer Satisfaction Measures

XYZ auto-company supplies its parts and components to three large scale auto companies. Company gets orders in frequent intervals depending up on the performance of company products, quality of products and quality systems followed in the company. The aim is to keep these three customers as our regular customers and in further planned to increase the new customer base. Due to the competitiveness, all the customers are looking for best suppliers, certified suppliers, quick deliverable suppliers, cost cutting suppliers and award winning suppliers etc. The objective is to become the number one suppliers to at least 5 to 7 companies. To become a regular supplier to these 7 companies, our company should be TQM implemented company or best practising the quality award models. Now our company is in the process of TQM implementation and customer satisfaction is one of the criteria of company. The company is planning to utilise the following customer satisfaction criteria:

- Conducting customer surveys
- Customer requirement survey
- Customer feedback analysis
- Customer complaint analysis
- Customer product analysis
- Customer final products analysis
- Customer relationship management
- Customer satisfaction index determination
- Commitment to customers

The company TQM implementation team has suggested above techniques to be practiced by the marketing and sales departments. Weekly reports on customer satisfaction criteria should be sent to the TQM team by the marketing and sales personnel. Regular customer feedback surveys have been conducted to assess the customer satisfaction levels and accordingly the products quality has been improved. Identification of customer requirements with personal contact and participating in the new product development processes are the company best practices.

In this way the auto company has implemented TQM and satisfied the customers and gained the manufacturing excellent awards. The company also identified the thrust areas of customer satisfaction index (CSI) are as follows:

- Product quality
- Product prise
- Product delivery and
- Product safety

TQM Implementation Outcome

After TQM implementation the materials and products with required quality flowing from suppliers plants to manufacturing and manufacturing plants to end customers. All the quality systems are implemented, so the quality has become the first priority in all the operations. Suppliers are supplying the materials with required quality, in required time and with required prices. Quality costs, quality systems in the supplier plants are always monitored and controlled to the TQM standards. All the suppliers are encouraged to give importance to quality, encouraged to get ISO 9000:2008 certification and to implement TQM. The suppliers are encouraged to produce the goods world class to satisfy their customers. Manufacturing processes are fully controlled by implementing TQM philosophy, trained manpower, preventive maintenance, benchmarking practices etc; Manufacturing practices are updated with enhanced techniques to improve their products quality to the world class quality. TQM tools and techniques are implemented and best practiced to reduce the defects, minimise wastage, control the processes, improve the production targets, reduce the machine down time, improve the productivity and over all performance of the organisation. Seven quality improvement tools such as SPC, pareto analysis etc; are utilised in the manufacturing and service operations to minimise the variations in the processes and products. With improved leadership skills the Sr. managers are performing well in getting the work done by all the employees in a cooperative environment. With the cooperative leadership style the managers are able to solve the problems easily.

This TQM trained managers are performing the leadership roles in a different way that is cooperative way to improve the quality and productivity of the employees. The leaders are striving to improve the quality of suppliers and satisfying the customers. Leaders are always in contact with customers to know their requirements and to get the feedback about their products and services. Leaders in continuous improvement process, conducts various surveys to know the changed needs of the customers. Leaders take the individual responsibility to delight all their customers with the innovative products. Leaders constantly monitor the customer complaints to enhance their service levels by attempting the complaints with in 24 hrs time. After TQM implementation and best practising the customer satisfaction techniques, the customer satisfaction index has been increased. Some of the TQM principles have been taken serious and practiced better to enhance the customer satisfaction index. The TQM principles includes the customer is king, customer should be treated as our own employee, customers are the best, customer enhances the financial capabilities etc; So our TQM trained leaders played gigantic role in satisfying the customers, retaining the customers and enhancing the customer base. The company customers are satisfied with our quality improved products, services, lower prises and innovativeness in our products.

Results after TQM Implementation

In the TQM implementation case study, we have utilised seven quality tools and techniques extensively to improve the quality performances of the company. After TQM implementation and best practicing the soft and hard TQM elements the following results have been achieved.

- Improved leadership skills
- Improved supplier quality (reduced raw materials rejection to 4% to 1.5%)
- Frequent delivery of supplies (every alternate day)
- Reduced inventory (5 days to 2 days)
- Improved manufacturing processes (5% efficiency)
- Improved customer satisfaction
- Improved employee satisfaction
- Reduced defect rate (from 6.34% to 1.4%)
- Reduced variations in the processes (2%)
- Reduced quality costs (from 3% to 1%)
- Reduced machine breakdown time (from 24 hrs to 8 hrs)
- Improved productivity and performance (30%)
- Increased sales (16%)
- Improved cultural habits and cooperative working etc.

Conclusions

During the case study research process identified critical success factors of TQM through extensive literature study conducted and through brainstorming sessions in the company. Now the case study is conducted at XYZ auto-company to know the effects of implementing critical success factors of TQM and best practicing the TQM tools and techniques. It was observed that the soft elements of TQM practices improve the strength for implementing hard elements of TQM. The hard elements of TQM practices improves the quality and over all performance of the company. All the critical success factors of TQM are to be best practiced to gain the manufacturing excellence and quality improvement awards. It was proved in this case study. TQM implementation and best practices of TQM tools and techniques gained various advantages like reduced quality costs and improved customer satisfaction.

The improved leadership skills of managers and supervisors played different role in motivating the employees to participate in decision making process and daily problem solving activities. Maintaining best relationship with suppliers, quality of supply services have been improved, quality of raw materials have been received in time, reduced quality problems from suppliers, quality management systems have been implemented in the suppliers companies, so that the over all supply performance index is improved steeply. The TQM implementation has impacted positively in the manufacturing quality improvement. Employees are encouraged to participate in suggestion scheme and awarded for their best suggestions. Employees

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are trained on new technology, new quality tools to improve their quality performances. In the beginning of training process employees were scared about new tools and technology, but later they understood the concept very well and now employing these tools and technology well in working. Improved morale boosts the employee participation level. Employee satisfaction increased many fold through TQM training process. Product rejection, rework and scrapings were reduced drastically by best practicing the TQM tools and techniques by the shop floor employees. The TQM implementation process provides the in depth knowledge to all the stake holders of the company about the benefits they are going to get in future. TQM implementation has gained the competitive edge and customer satisfaction. Tangible and intangible benefits also gained by company after TQM implementation. Committed leadership of top management, supportive leadership of middle management and total involvement of employees have made TQM a successful endeavour in the company.

There were so many benefits by implementing TQM philosophy in auto companies in India. Still there is gap in understanding the TQM philosophy and its implementation procedure. There is an essential thing we identified is that, some certificate should be issued for TQM implementation so that the industries should get the interest in implanting TQM philosophy.

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Determinants of Success of Australian-Malaysian Joint Ventures: A Preliminary Analysis

Radwan A., Kharabsheh

Both successful Joint Ventures (JVs) and failed investments have been reported recently There are numerous studies that address conflicts between different cultures, traditions, as well as value systems, but only a few of them focuses on identifying the key factors and their managerial implications that the foreign investors need to successfully enter into an emerging market, such as Malaysia

The aim of this study is to investigate the factors that are critical to the success of the Australian-Malaysian joint ventures (JVs) Using intensive interviewing of local and foreign managers in 11 Australian-Malaysian IJVs from the construction, services and manufacturing industries the study found that factors fostering trust, information sharing and cultural understanding among IJV participants improve their chances for success. Factors that decrease participants' coordination costs also improve success rates Other success factors include goal convergence and synergy, effective governance and geographic proximity

Keywords: *International Joint Ventures, Australia-Malaysia, Information Sharing, Cultural Understating*

Introduction

The aim of this study is to investigate the factors that are critical to the success of the Australian-Malaysian joint ventures (JVs). The study also explores the merits of 'multiple party' perception of the performance of the international joint ventures (IJVS). Both successful JVs and failed investments have been reported recently. There are numerous studies that address conflicts between different cultures, traditions, as well as value systems, but only few of them focus on identifying the key factors and their managerial implications foreign investors need to successfully enter emerging markets such as Malaysia. More importantly, IJVs have become an important means of market entry for many firms, particularly those seeking entry into Asia (Julian, 2008). By identifying key success factors, it will be possible for the Australian partners in IJVs to incorporate those factors into firms' long-term business strategies and policies, and, therefore, enhance their business opportunities in the future.

Furthermore, most of the research on performance and success in IJVs examined the perspective of only one of the parties to the venture. For example, Vaidya (2009) argued that the relationship between IJV formation and success is complex and that there are various moderating variables, such as trust, commitment, and goals of the different partner organizations, which, in turn, affect the relationship between IJV formation and success.

Ren, Gray and Kim (2009) argued that although joint evaluation measures between IJVs partners may be commonly used in IJVs, criticism can be levied against it because the parents' weighing of the importance of the goals may vary. Islam, Ali and Sandhu (2011) argued that due to differences in norms, resources and infrastructure firms from newly industrialized countries such as Malaysia and India are likely to have different strategic motives compared to developed country firms. Therefore, the findings of this study will contribute to our understanding of the partners' perception of the IJV success, performance assessment, and evaluation.

International Joint Ventures

IJVs provide potentially a better long-term financial payback in comparison with less resource-laden foreign market entry and expansion modes, such as exporting, licensing, and contract manufacturing (Bedrow and Beamish, 1999), allow more control over international business, and enhance experiential

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knowledge that is critical for further overseas commitments (Bedrow and Beamish, 1999).

However, despite the proliferation of IJVs as a critical element in an organization's business network for competing within core markets, there is an increase in the reported number of failed IJVs (Ross and Arbor, 2007, Johnston and Apud, 2006). Most studies indicate that 30 to 70 percent of the alliances formed end up failing (Beamish, 1993; Bleeke and Ernst, 1996; Bleeke and Ernst, 1995, Hill and Hillriegl, 1994; Kogut, 1989). These studies indicate that while alliances may be mushrooming in unprecedented fashion, alliance success is difficult to achieve. Thus, understanding what firms can do to enhance the probability of success in collaborative ventures is an intriguing and important issue for both managers and alliance researchers.

IJVs in Malaysia

There is a dearth of studies on IJVs in Malaysia. With the exception of few studies (i.e., Ainuddin, Beamish, Hulland and Rouse, 2007; Julian and Ahmad, 2009; Lyles, Sulaiman and Kechik, 1995; Makino and Delios, 1996; Sazali, Haslinda, Jegak and Raduan, 2010), the majority of studies on IJVs and references in the previous section focuses on transition economies, especially China. While there are similarities between the two countries, China and Malaysia are very different, which limits the generalisability of Chinese studies.

Malaysia has been categorized as a restrictive country (Ainuddin, Beamish, Hulland and Rouse 2007) because of the restrictions imposed by the Malaysian government on foreign equity ownership The Malaysian law requires that foreign companies in certain sectors of the economy enter into a JV agreement with a Malaysian partner to be able to enter the Malaysian market. This leads to the formation of a large number of JV companies in Malaysia. According to the Malaysian Registrar of Companies (ROC), the number of IJVs that were operating in Malaysia in 2008 was 1038. Out of these, 850 IJVs were considered active, and 103 were either dormant or had ceased operation.

Methodology

Data were collected through semi structured intensive interviews and through the document analysis of Australian and Malaysian managers of the JVs. The process of data collection and analysis proceeded iteratively in accordance with the interpretive research tradition (Walsham, 2006). Thematic content analysis (Bardin, 1977) was used to analyze the data collected during the interviews. The researcher conducted interviews with the managers of 11 IJVs in the sectors of service, manufacturing, and construction. While an interview is a direct conversation (Lofland and Lofland, 1995; Lofland and Lofland, 1984), intensive interviewing permits an in-depth exploration of a particular topic or experience, and, thus, is a useful method for interpretive inquiry. The interviews consisted of an open discussion around a few general points raised by the interviewer. Below are the discussion points:

(i) How would you define success in a venture like this? What makes one JV more successful than another?

(ii) What are the driving factors behind entering a JV with the Malaysian partner? Why are you in this JV?

(iii) What are the factors that led to the success or the failure of the JV? What are the barriers to success? What are the enablers?

Data - base

Despite the 4,000 Australian businesses operating in Malaysia, only few have actual presence in the country (Kane, 2009). More importantly, of the few that are stationed or have some form of presence in Malaysia, very few have JVs with Malaysian companies. Using the databases of the Australian High Commission, the Malaysia-Australia Business Council and the Malaysian Industrial Development Authority, the researcher compiled a list of all Australian Malaysian IJVs operating in the Kalang Valley Region. The list includes no more than 30 IJVs, which reflects the reluctance of Australian businesses to use JVs as an entry mode in Malaysia. Each of the 11 JVs had invested AUD$5 million or more in their projects. The JVs varied in size from 50 to 200 workers. The ages of the JVs ranged from 3 years for the youngest to 27 years for the longest one. All of these JVs are still in operation.

Defining Venture Success

Assessing the performance of domestic JVs is difficult; what is even more difficult is assessing the performance of IJVs because of the potential existence of multiple perspectives. An even greater challenge lies in defining success in a way that makes comparisons across different IJVs possible; this is due to the limited number of Australian-Malaysian IJVs, in general; the number becomes less when studied by industry classification. A common acid test for IJVs success, according to participants, was whether the JV made profits as anticipated by the objectives of both partners at the beginning of the JV. A JV that was terminated before the achievement of its expected returns was generally deemed a failure. The views of success expressed in the interviews can be grouped into three categories·

(i) The extent to which the venture achieved the expected financial objectives identified at the beginning of the JV, (ii) The depth of the relationship between the partners (which meant a continuing relationship in the future and trust among the partners) and whether or not the venture built important networks of relationships with key customers and suppliers, and (iii) Whether or not the venture developed new products for both the Malaysian market and the international market.

Meeting Financial Objectives

Meeting the financial objectives was very important for both the Australian and the Malaysian partners. Due to cultural issues, Australian partners emphasised the importance of an effective cash flow management in Malaysia through the use of schedules and effective governance. In many instances, the customer of Australian companies was the Malaysian government. This, of course, involves an implicit assumption on the Malaysian side: an assurance of the payment to the Australian companies regardless of the time schedule. This meant repeated delays in payment, which negatively affected the profitability of the Australian firm, affected its cash flow.

In some instances, Australian companies were willing to sacrifice profitability in order to increase and protect its market share in Malaysia This did not go well with the Malaysian partner who, in many instances, was aiming at making profits.

Building Deep Relationships with Partners, Customers and Suppliers

Building deep relationships with partners, customers, and suppliers was also considered important for the Australian and the Malaysian partners alike. This was specifically much more important to the Australian partner. The Australian partner was treated as an outsider to the market, and, for legal and cultural considerations, business deals and preferential treatments were granted to local partners, unlike the Australian one. This meant that the Australian partner needed the help of the Malaysian partner as to gain access to governmental and private business deals. The practice of who are competitors working together in Malaysia is commonplace which results from the way the Malaysians government awards business contracts. Business contracts are not necessarily awarded on merit; rather, the Malaysian government uses these business deals to guarantee an equitable distribution of wealth among the Malaysian people and, specifically, the Bumiputras. Some of the Australian companies succeeded in using Malaysian contacts to access the markets that have never been accessed before by Australian companies.

Developing Successful New Products for Malaysian and International Markets

Determinants of Success

This study revealed numerous factors that influence the success of Australian-Malaysian IJVs.. The cross-case comparison was the most useful tool for the researcher's induction of the determinants of success. Basically, the study showed that more successful JVs exibited (a) a greater cultural understanding among the partners; (b) a more effective coordination (lower coordination costs) among partners; and (c) a greater knowledge sharing among partners. A variety of factors influenced the ability of JV partners to build a better cultural understanding of other partners, and the ability to share knowledge (e.g., Another success measure, deemed important by the participants, is the ability of the IJV to develop products suitable for the Malaysian market. The Malaysian environment has its own unique characteristics, and, therefore, Australian and foreign products may not be entirely suitable for this environment. Therefore, these Australian companies had to develop a better understanding of this environment in order to develop suitable products. The Malaysian customers appreciated the fact that the Australian company was taking into consideration their specific needs and wants. Some of the products that were developed in Malaysia became strong performing products in the region.

It is worth noting that since this study was an exploratory study and due to the limited number of available Australian-Malaysian IJVs it was not possible to ask participants to rate the importance of success dimensions. This is also why it was not possible to use more advanced analytical techniques such as factors analysis. The conclusions reached regarding the importance of the success dimensions were based on the researcher's observations during the interviews.

The extent to which the participants trusted each other, goal convergence among the partners), and the cost of coordinating the venture's activities.

Figure 1 is a path diagram representing the key success factors suggested by the respondents, that influenced the JV's success or failure. The figure shows the direction and nature of the impact, and the linkages from these factors to outcome success measures. The boxes on the left reprsent two sets of success factors (nine factors in total): recuritment, training, and structural factors managers said to influence their JVs success. The managers' list of success measuers is on the right side of the figure. The characteristics that the more successful JVs exhibited are: greater cultural understanding, knowledge and information sharing, and lower coordination costs among participants. This is shown in the centre of the figure, together with "trust," which is more closely linked to information sharing. These are the key mechanisms through which the nine factors influence success. For the purpose of simplifyng the figure, the factors are divided into two groups that are similar in the way they impact success. The first group of varaibles deals with the recruitment and training practices of the JV, and the second group deals with the structural variables between the partners in the JVs.

The greater trust is, the more information is shared, and the greater the likelihood of a successful outcome becomes. In contrast, the higher the coordination costs are, the lower the likelihood of having a successful outcome becomes. Reading from left to right along the directional lines, the plus and minus signs reveal the nature and direction of the impact. Each factor contributes to, or detracts from, success. For example, geographic proximity lowers the costs of coordination, and, thus, is positively associated with success (as shown by the two negative signs linking these directional arrows in Figure 1 below).

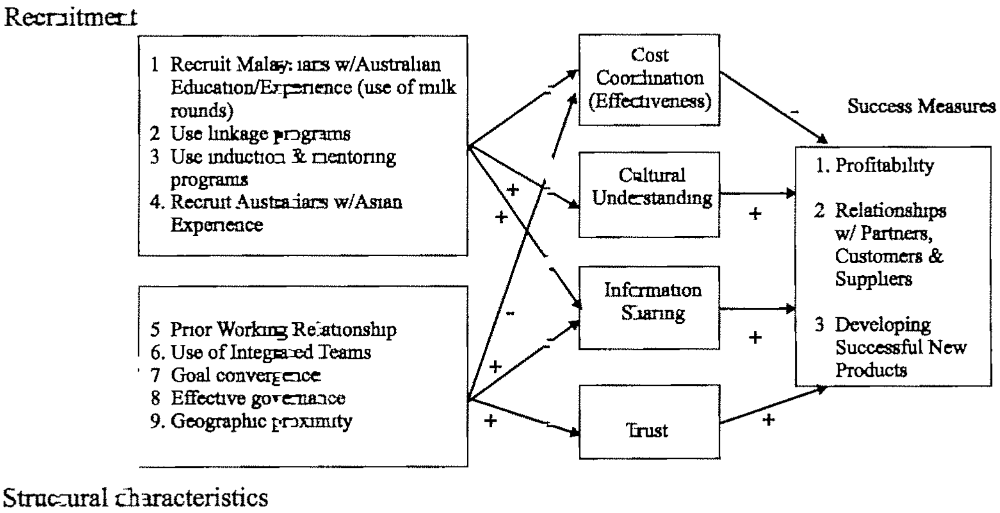
Recruitment
1 Recruit Malaysians w/Australian Education/Experience (use of milk rounds)
2 Use linkage programs
3 Use induction & mentoring programs
4. Recruit Australians w/Asian Experience
5 Prior Working Relationship
6. Use of Integrated Teams
7 Goal convergence
8 Effective governance
9. Geographic proximity
Structural characteristics
Cost Coordination (Effectiveness)
Cultural Understanding
Information Sharing
Trust
Success Measures
1. Profitability
2 Relationships w/ Partners, Customers & Suppliers
3 Developing Successful New Products
+
-

Figure 1: Determinants of success in Australian-Malaysian JVs.

Employing Malaysians with Australian education and/or work experience

(Use of milk rounds)

The most frequently cited determinant of success was employing Malaysians with Australian degrees or work experience. Almost all the JVs examined employed Malaysians who had an Australian degree or have had worked for some time in Australia. This factor was viewed as influencing success because it affected both information sharing (not just the willingness but the ability to share information), and coordination costs. A Malaysian who graduated from Australian universities had a better understanding of the Australian culture, and of how to do things, and, therefore, he/she could communicate better with Australian expatriates in the JV.

One participant said:

> *an exposure to the Australian culture meant an understanding of the Australian way. Australians are direct and straightforward and this does not go well with Asian cultures. However, Malaysians who had an Australian degree appertained this directness in the communication and understood that it is not actually being rude but honest"*

Another participant argued that:

> *it is not enough to have an Australian degree An Australian work experience is also preferable. It is possible to study in one country but may not mix enough with the locals. However, I believe that those [Malaysians] not only study but worked in Australia and mingle with their Australian counterparts and had opportunities to extend their relationships with Australians outside the work environment.*

The second issue deals with cost coordination. Participants indicated that employing a Malaysian manager with an Australian education can save the JV a lot of money. It is well known that the cost of employing an Australian expatriate is three times more than employing a local Malaysian with a similar experience and knowledge. Furthermore, contrary to Malaysians graduating form Malaysian universities, Malaysians graduating from Australian universities are exposed to Australian professional standards and training schemes, and, therefore, they require a minimum induction when it comes to the nature of the work they do.

Furthermore, some JVs, especially the larger ones, went a step further from finding Malaysians who had an Australian degree or work experience to head hunt Malaysian students in Australia while studying for their degrees by using "milk rounds".

Use of "linkage programs"

In addition to the previous factors, the larger more technical IJVs, at least three JVs in this study, had linkage and exchange programs that allowed Malaysian employees in the JV to travel and work for some time in Australia. The program also allowed Australians through home office to travel and work for some time in Malaysia. A participant commented that:

> *[the exchange of staff] helped in many ways. It was seen by motivated Malaysian employees as a reward for their performance, gave them exposure to Australian business environment in a real life setting and sometimes allowed them to acquire training in the parent company. Australians on the other hand got a firsthand Asian exposure and a feeling of a different work environment.*

Use of "induction and mentoring programs"

In addition to employing Australians with an Asian experience, JVs reported the use of formal induction programs for junior Australian expatriates once they arrive at Malaysia. This is to familiarise the expatriates with the country, the culture, the communication styles and the do's and the don'ts. One participant explained:

> *we try to make our employees become more appreciative of the different cultures in Malaysia. Things like religious matters like the prayers, fasting of Ramadan, the use of obscene language. If we find out that an employee does not respect the local culture we take strong stands...*

Not only do these induction programs target Australians but they also cater for the locals as well. Once a Malaysian joins the ranks of the JV, he/she is induced into the culture of the firm itself which may be predominately Australian. Later on, both Australian and Malaysian employees are given a mentor or what is referred to as "bodies". One participant explained:

> *New staff may be reluctant to refer to their immediate bosses if they face a problem or an uncertain situation. They may be seen as not competent enough or do not possess the right knowledge So we give them mentors. We actually call them bodies here because they are usually informal and are peers, not superiors to. This ensures that employees speak interact freely without feeling that they are being observed or evaluated.*

Employing Australians with Asian Experience

Almost all participants revealed that hiring Australian expatriates with an Asian experience was a main factor for success. Although most JVs had induction and mentoring programs, they targeted junior Australian expatriates not top managers. As far as employing top level managers is concerned, it was preferred to employ those with an Asian experience. One participant argued:

> *We usually look for managers [Australian] who has an Asian experience. I think the idea is that Asian cultures although diverse are similar in terms of communication styles, negotiation styles and ways of doing business. Once we choose a manager who has this kind of exposure it is then very easy to induce him into Malaysia as a country.*

Prior Collaborative Relationships

Prior relationships between partners at different JVs were influential in several JVs, and instrumental in at least three JVs. When the Australian and Malaysian partners initiating the JV had experience working together in export/import, sub-contracting or short-term projects, the JV partners were more likely to trust each other and share information; thereby, increasing the possibility of achieving JV's objectives

To illustrate, an Australian multinational construction company had an extensive experience in operating as a WOS in numroues projects in Malaysia for the last three decades. However, due to foreign ownership restrictions in Malaysia, this company could not apply for government projects directly except through a sub-contractor Malaysian firm. When the company decided to directly compete for major government projects, it entered into a JV with a Bumiputra Malaysian company. It was realtively easy to make the transition and choose a Malaysian JV partner based on its previous experience. The Australian manager said:

> *We have worked with numerous Malaysian companies on different projects and we could with time identify the ones with substance When we decided to enter into a joint venture we knew very well which company to partner with Our Malaysian partner brings a lot of value into the joint venture. It has merit on its own in the industry.*

In another JV that "functioned smoothly," a participant noted that prior personal relationships were important; he stated:

> *I graduated from an Australian university in the nineties and joined an Australian company for three years. Later I went back to Malaysia and worked there for 2 years in a local company. I found out that the Australian company that I worked with in Brisbane has an operation in Malaysia and decided to try and join them It was very easy since they already knew each other and I was familiar with the company's culture and the Australian ways of doing business.*

Thus, the interviews suggest that the possibility of success was enhanced when the participants had prior relationships (leading the JV to trust each other). Participants with a history of prior contact together were more likely to trust each other and openly share the knowledge necessary to achieve the project's technical objectives.

Use of Integrated Teams

Control has always been an issue in IJVs and a major cause of conflict between the participants. In some developing countries, like China, for example, the JV partners split control over functional areas of the

JV. While this was the case in some JVs in Malaysia, numerous JVs used integrated teams and shared the responsibilities together with the local partner. To this effect, one manager commented:

> *When it comes to JVs we prefer to use integrated teams instead of scope split JVs. So, half of the board would be Australians and the other half Malaysian. We found that when both the two partners pursue the same goals and have similar capabilities it more fruitful to have both share the decision making. It increases the commitment and trust among the partners.*

The exception to this was when the Australian partner had a sleeping Malaysian partner due to ownership restriction. In this case, the sleeping partner is only used to communicate with government agencies and had little control over the day-to-day operation of the JV.

Goal Convergence

Divergent or conflicting assumptions undermine the ability of the management team to agree on the interpretation of market information (as well as government and cultural knowledge) and, hence, their ability to respond quickly to emerging trends or problems (Baker and Sinkula, 1999). This is also emphasised in the work of Nidumolu, Subramani and Aldrich (2001) who argue that knowledge resides in individuals who participate in multiple group processes and key decision-making activities in organisations. This knowledge management and learning activity should aim at building some degree of shared contexts.

All JVs managers, both Australians and locals, agreed that the goal convergence was a very important determinant of success. A cultural gap exists between the Australian and Malaysian partners, which translates into differing ideas about how the business should be conducted. Goal convergence helps reduce coordination costs and increase information sharing through aligning the partners' goals and creating common grounds. To this effect, one Australian manager explains:

> *Whenever businesses are faced with a problem in Malaysia local managers tend to use the "army solution" that is "throw more men at the problem and it will disappear". This mind set is reflection of the cheap relatively cheap abundant labor available in Malaysia. In Australia, however, we face a shortage of skilled labor, labor cost is very high is very high. The solution comes from using technology and increasing the productivity of the existing limited number of labor These different mindsets clash causing challenges to the joint venture. We finally come to a common ground. Our argument is that, even if labor is cheap now, things are changing and with time the cost of labor will rise eroding that advantage*

Effective Governance

Governance issues were especially important at the initial and implementation stages of the JV. This was due to the differing business cultures of the JV partners. However, one advantage Malaysia has over numerous countries is its British colonial heritage. Malaysian courts inherited the English common law system, and used English as the official language until the 1960s. Thus, there is a similarity between the Malaysian and the Australian systems, which provides some kind of assurance to Australian managers who require such a system to protect their interests and those of their JVs. This becomes more important when dealing with construction projects where issues arise in connection to schedules, deadlines, and cash flow. To a certain extent, this could reduce coordination cost.

One participant argued that:

> *Because we deal with the Malaysian government in our project we are expected to feel happy and safe Safe in the sense that it does not mater when we are paid This is the government and the government will always pay. Now this is a problem because it may affect our profitability but it surely does impact o our cash flow We were in situations where we were running at only 50% of our cash flow! Now that is difficult Well written contracts meant that we could rely on them to make sure we are receiving enough cash flow according to the implementation plan in the contract.*

Geographic Proximity

Participants generally agreed that geographic proximity contributes to JV success through improving the Australian managers' understanding of the Malaysian context and by lowering the coordination cost among the partners. More importantly, it is critical to have Australian managers in Malaysia in the early stages of the JV – i.e., partner selection, government permits the reliance on third party consultants is expensive and may be less effective One participant said:

> *Australian managers based at home [Australia] do not make the best decisions for the JV. They are more focused on the interests of the parent company; they make assumptions about the Malaysian context and usually rely on filtered or delayed information. Also it is unwise to rely on consultants especially in the early stages when our knowledge of the country is little Before I was sent to Malaysia we asked a local consultant to undertake some work for us in KL. The consultant asked for a very high fee. We decided not to use his services and I undertook the same work for a fraction of the cost proposed by the consultant. One permit which was cited costing 18,000 AUD $ was only 4,000 AUD $!*

Discussions and Conclusions

This study examined the success of Australian-Malaysian JVs from the perspectives of both the Australian and local managers of the JV. The study found a general agreement on dimensions of success but minor differences in the importance placed by companies upon these dimensions. Thus, the study recommends the use of multidimensional measures of success for monitoring success in ongoing and future IJVs The study showed that more successful JVs exhibited (a) a greater cultural understanding among the partners; (b) a more effective coordination (lower coordination costs) among partners; and (c) a greater knowledge sharing among partners. A variety of factors influenced the ability of JV partners to build a better cultural understanding of other partners, and the ability to share knowledge (e.g., the extent to which the participants trusted each other, goal convergence among the partners) and the cost of coordinating the venture's activities.

The study makes numerous recommendations. First, Australian firms that plan to enter the Malaysian market via JV strategy should enter Malaysia via less committing modes of entry such as exporting. This allows the Australian firm to build a stock of knowledge about Malaysia that enables it to easily choose a Malaysian partner for a JV entry mode in a later stage. Australian firms that operate an IJV in Malaysia must employee Malaysian employees with an Australian education or work experience in order to reduce the cultural gap and increase information sharing in the IJV. One popular way to do that is by trageting Malaysian students who are studying in Australia and have already had cultural exposure and knowledge of Australam ways of doing business.

Finally, more work is needed to examine how Australian and Malaysian partners differ in their goal setting in the formation stage of the IJV. Furthermore, work is also needed to quantitatively rate the importance of success dimensions of the IJV reflecting the relative importance of these dimesiosn to the different partners.

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Performance Evaluation of Indian Airline Industry: An Application of DEA

Alok Kumar Singh

The airlines in our country are experiencing low fares, poor load factors, drop in premium travels, decline in cargo loads and low yields due to deteriorating market conditions To tide over the situation, companies need to have clear game plan and management strategies to effect turnaround of the airlines. This can be achieved only if companies know their performance gap with the benchmarked airline Present work is aimed at calculating the relative performances of different Indian domestic airline industry (total 11 in India) using DEA framework Data Envelopment Analysis is used to construct performance indices on the basis of the multiple outputs which airlines produce and the multiple inputs which they utilize The result is used to find which variables the managers have some control over and what the relative importance of each variable is that affecting performance. Data Envelopment Analysis (DEA) provides a clear answer to the airline manager's problem

Keywords: *Data Envelopment Analysis (DEA), Decisions Making Unit (DMU), Relative Efficiency, CCR DEA Model (1978), Linear Programming, Performance Evaluation, Indian Industries*

Introduction

The objective of any enterprise is to increase the output (goods or services), reduce costs, and obtain a reasonable return on investment These objectives can be achieved by improving productivity. Productivity as described by Agarwal et al., (2002) is the relationship between the output generated by a production or a service system and the input provided to create this output. Productivity broadly relates to the efficient and effective use of the existing resources (land, labour, capital, material energy, etc.) within the constraints inherent in the business of producing goods or services

Productivity, thus, is implied in every economic activity and primarily stands for producing more and more outputs from less and less resources. It is determined by dividing the output by the input. When productivity of two firms are compared, the more productive firm produces more output with the same input or it produces the same output with lesser input. It is vital to assess and monitor the productivity of organizations regularly to check the degree to which inputs are utilized in the process of obtaining desired outputs. Productivity assessment is essential in a service industry like aviation. Productivity improvement is the basic function of management. The aviation sector is in a peculiar situation. Its resources are shrinking while the demands for services are increasing. Thus management of aviation companies should take immediate steps for the efficient and effective utilization of the available resources for maximum output.

It is indeed a fact that aviation is the barometer of economic activity. With the winds of change blowing across the world and globalization becoming an accepted phenomenon, consequent changes in the social and economic environment will affect, and are affected by, the aviation. Now a days, air transport is the prime mode of transportation. The ease of accessibility, flexibility of operations and reliability has earned air transport an increasingly higher share of passenger transport mode. The passenger and the cargo traffic carried by air transport is increasing at a rapid pace. Due to privatization the share of national carriers **has** declined to meet the incremental passenger traffic demand. A total of 44.38 million passengers, MOA, were carried by all the scheduled domestic Indian Carriers during the year 2007-08.The scheduled domestic traffic passengers witnessed a growth rate of 24% during 2007-08. The corresponding figure for the year 2006 -07 was 42%.

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In this analysis, the performances of all Indian domestic airlines (total 11) have been assessed for the year 2007-2008 using DEA framework.

Background

There is a need to measure and compare the efficiencies of organizational units, where there is a relatively similar set of units. The growing competition and globalization provides additional motivation to these efforts. The traditional measure of efficiency, which is the ratio of output to input, is often inadequate due to the existence of multiple inputs and outputs related to the different resources and activities of units. Other concerns in assessing performance are how to improve those who are not efficient and how to persuade them to accept the results without any "pushback".

Economic production as described by Agarwal et al., (2002) is a term used by economists to describe a process that transforms inputs into useful outputs. They use production functions, which describe input and output relationship, to determine the optimum potential for a production unit. A production function, or production frontier, is the frontier of the production possibility set and is used to measure efficiency. However, the true frontier is not known and an empirical frontier is usually constructed based on the production data, which are the observed and achieved levels of inputs and outputs.

There are two main techniques as described by Agarwal et al., (2002) for measuring productive efficiency, which describes how well a production process transforms resources into useful outputs.

The parametric method, as exemplified by econometric approaches, requires an explicit formation of the production functional form. The non-parametric approach as represented by Data Envelopment Analysis provides greater flexibility since it does not require a priori assumptions on the functional relationship of inputs and outputs.

Data Envelopment Analysis is a powerful technique for measuring the relative efficiency of organizational units with multiple inputs and outputs. This novel approach was introduced by Charnes, Cooper and Rhodes in 1978, and is gradually becoming a useful management tool. In addition to the efficiency score, DEA indicates targets for inefficient units These targets, which are shown to the inefficient units as models, are their actual peer units; therefore they are more likely to be accepted by these units. DEA's advantages over other methodologies resulted in widespread application of this technique in over 50 industries.

Objective

The objective of this analysis is to carry out the competitor analysis of Indian Airline industry using Data Envelope Analysis (DEA) framework which will help to take the future course of action for its competitive advantage and will provide the opportunity to benchmark with the best airline.

To identify performers and underperformers

The objective analysis is carried out through DEA framework for the period of 2007-2008.

Data Envelopment Analysis

DEA as described by Banker et al., (1984) and Anderson et al., (1993), is a relatively new technique in productivity management. DEA establishes a best practice group of units, identifies inefficient units compared to the best practice group and quantifies the amount of potential improvement possible for each inefficient unit. In simple terms DEA indicates the level of resources savings and or services improvements possible for each inefficient unit if it is to achieve the lever of efficiency of the best practice units.

In this study, CCR DEA model given by Charnes et al., (1978) is employed. In this model the ratio outputs to inputs is used to measure the relative efficiency of the DMUs to be evaluated. CCR DEA is a multifactor productivity analysis model for measuring the relative efficiencies of a homogenous set of decision making units (DMUs). The efficiency score as described by Srinivas et al., (2000), in the presence of multiple input and output factors is defined as:

Efficiency = (weighted sum of outputs) / (weighted sum of inputs)

Assuming that there are n DMUs, each with m inputs and s outputs, the relative efficiency of test DMU is obtained by solving the following model proposed by Charnes et al., (1978):

$$\max \quad \sum_{k=1}^{s} v_k y_{ki}$$

$$s.t \quad \sum_{j=1}^{m} u_j x_{ji} = 1$$

$$\sum_{k=1}^{s} v_k y_{kl} - \sum_{j=1}^{m} u_j x_{jl} \le 0 \quad \forall l$$

$$v_k, u_j \ge 0 \quad \forall k, j$$

Where

$k = 1$ to s,

$j = 1$ to m,

$i = 1$ to n,

y_{ki} = amount of output k produced by DMU i,

x_{ji} = amount of input j utilized by DMU i,

v_k = weight given to output k,

u_j = weight given to input j.

The fractional program shown above can be converted to a linear program as shown below. For more details on model development see Charnes et al., (1978).

$$\max \quad \frac{\sum_{k=1}^{s} v_k y_{ki}}{\sum_{j=1}^{m} u_j x_{ji}}$$

$$s.t \quad \frac{\sum_{k=1}^{s} v_k y_{kl}}{\sum_{j=1}^{m} u_j x_{jl}} \le 1 \quad \forall l$$

$$v_k, u_j \ge 0 \quad \forall k, j$$

The above program is run 'n' times in identifying the relative efficiency scores of all the DMUs. Each DMU selects inputs and outputs weights that maximize its efficiency score. In general, a DMU is considered to be efficient if it obtains a score of 1 and a score of less than 1 implies that it is inefficient.

Applications

DEA, as described by Williams et al., (2006) is most useful when a comparison is sought against "best practices" where the analyst doesn't want the frequency of poorly run operations to affect the analysis. DEA has been applied in many situations such as:

- health care (hospitals, doctors)
- banks
- manufacturing
- benchmarking
- management evaluation
- fast food restaurants
- retail stores
- education (schools, universities)

Strengths of DEA

As the earlier list of applications suggests, DEA can be a powerful tool when used wisely as described by Williams et al., (2006). A few of the characteristics that make it powerful are·

- DEA can handle multiple input and multiple output models.
- It doesn't require an assumption of a functional form relating inputs to outputs.
- DMUs are directly compared against a peer or combination of peers.
- Inputs and outputs can have very different units as described by Slack et al., (2008). For example, X1 could be in units of lives saved and X2 could be in units of dollars without requiring an a priori tradeoff between the two.

Limitations of DEA

The same characteristics that make DEA a powerful tool can also create problems as described by Williams et al., (2006). An analyst should keep these limitations in mind when choosing whether or not to use DEA.

- DEA is good at estimating "Relative" efficiency of a DMU but it converges very slowly to "Absolute" efficiency, Banker et al., (1986). In other words, it can tell how well DMUs are doing compared to peers but not compared to a "Theoretical Maximum."

- Since DEA is a nonparametric technique, statistical hypothesis tests are difficult and are the focus of ongoing research.
- Since a standard formulation of DEA creates a separate linear program for each DMU, large problems can be computationally intensive.

Research Design

Methodology

The general methodology for study is based on secondary data. The dataset, taken from Ministry of Civil Aviation, Government of India, India Air Transport Statistics (2007-2008), for this study covers all the domestic airlines in India. Appendix 1 gives the total domestic Indian carriers under study. The data have been obtained from the annual report (year 2007-2008) and interactions with senior executives of all the domestic airlines. In addition, detailed study of various companies documents like detailed project reports, feasibility reports, organizational announcements, etc. was also undertaken.

Data and Variables

Attempts have been made to incorporate a fairly comprehensive list of inputs and outputs, which reflect the general, informative and robust results. I have selected the input variables as Fleet size (FS), Total Employees (TE) and Total operating expenses (TOE) and output variables as Revenue Pax Kms performed (RPK), Tonnes Kms performed (TK), Aircraft Utilization (U), On Time Performance (OTP), Cancellation Rate (CR), weight load factor (WF) and pax load factor (PF). The details of the observed data for all the domestic airlines are shown in Table1

Inputs

Three inputs have been considered as the most important in producing the output.

Fleet Size (FS) comprises the total number of aircraft held by the airline. It is representative of the capital input.

Total Employees (TE) refers to the total number of employees working in a airline. It is representative of the labour input.

Total Operative Expenses (TOE) represents the working capital inputs in terms of cost incurred (ATF fuel cost and other operative expenses).

Outputs

Revenue Pax Kms performed (RPK)

A revenue passenger kilometer (RPK), MCA (2007-2008), is a measure of the volume of passengers carried by an airline. A revenue passenger-kilometer is flown when a revenue passenger is carried one kilometer. A passenger for whose transportation an air carrier receives commercial remuneration is called a revenue passenger. This excludes passengers travelling under fares available only to airline employees and babies and children who do not have a seat of their own. The RPK of an airline is the sum of the products obtained by multiplying the number of revenue passengers carried on each flight stage by the stage distance - it is the total number of kilometers travelled by all passengers. RPK is a measure of sales volume of passenger traffic.

Tonnes Kms performed (TK)

A metric tonne of revenue load carried one kilometer. Tonne-kilometers performed, MCA (2007-2008), equals the sum of the product obtained by multiplying the number of tonnes of revenue load carried on each flight stage by the stage distance. Tonne-kilometers available equals the sum of the products obtained by multiplying the number of tonnes available for the carriage of revenue load (passengers, freight and mail) on each flight stage by the stage distance.

Aircraft Utilization (U)

It represents, MCA (2007-2008), the number of hours of aircrafts utilized in hours. It is representative of the technical efficient manpower that is able to make the aircraft airworthy of flying.

Weight Load Factor (WF)

Tonne-kilometers performed, MCA (2007-2008), expressed as a percentage of tonne kilometers available.

Pax load factor (PF)

Passenger-kilometers performed, MCA (2007-2008), expressed as a percentage of seat-kilometers available.

On Time Performance (OTP)

It represents, MCA (2007-2008), the on time performance of the airlines expressed as percentage.

Cancellation Rate (CR)

It represents, MCA (2007-2008), the total number of flights cancelled to the total number of scheduled flights expressed as percentage.

Table1: Values of Input and Output Variables

Year 2007-2008		INPUTS	
DMU	**Fleet Size (FS)**	**Total Employee (TE)**	**Total Operating Expenses/ Capital in Millions Rs (TOE)**
1. AI Express	18	833	10372
2. Indian Airlines	72	17688	98365
3. Alliance Air	20	768	3595
4. Jet Airways	81	13163	93995.9
5. Jet Lite	25	2557	19147
6. Air Deccan	41	3310	28123.3
7. Paramount	5	611	2449.1
8. Spice jet	19	2321	15595.3
9. Kingfisher	41	5023	35051.1
10. Go air	6	1198	6589.4
11. Indigo	17	2074	13451.1

Year 2007-2008	OUTPUTS						
DMU	**Revenue Pax Km Performed (millions)**	**Tonnes Km Performed (millions)**	**Aircraft Utilization (hrs)**	**Cancellation Rate (%)**	**Wt. load factor (%)**	**Pax load factor (%)**	**On Time Performance (%)**
1. AI Express	4224	435	52625	1	67.9	71	75
2. Indian Airlines	12782	1284	224025	0.7	71	68.6	76.5
3. Alliance Air	370.4	40.3	17529	0.7	70.5	66.8	76
4. Jet Airways	8564 1	833	267933	3.6	56.3	70.9	79.1
5. Jet Lite	3809 6	369.1	76893	6.2	73.5	71.1	77.8
6. Air Deccan	6259	549.3	111125	1.1	71.5	73.3	79.5
7. Paramount	286.3	25.3	12270	3.9	68.6	70.8	87.6
8. Spice jet	4343 3	412.6	50324	1.1	68.3	72.2	80
9. Kingfisher	5141 5	426.4	113959	1.1	58.7	68.1	81.2
10. Go Air	1530	134.9	18120	0.6	76.8	77.4	80.1
11. Indigo	3861.9	384.5	54540	2	71.5	72.7	86.5

Data Analysis

First of all Correlation and Regression analysis, see Aczel et al., (2006) have been carried out to determine the extent of relationship between input and output variables. Table 2 shows the correlation matrix between all inputs and output variables. It has been found that output variables RPK, TK and U has good correlation with inputs variables FS, TE, TOE, while output variables WF, PF, OTP and CR has negative and nearly zero correlation with input variables therefore these variables WF, PF, OTP and CR have been dropped from the analysis.

Next Multiple Regression analysis, see Aczel et al., (2006) have been carried out to determine the extent of causal relationship between all the input and output variables. Table 3 shows the R^2 and F values between all the output variables and the input variables. It has been found that R^2 and F values for inputs vs. RPK, inputs vs. TK and inputs vs. U has high percentage of R^2 and high value of F while for input vs. OTP, input vs. WF, input vs. PF, input vs. CR has very low R^2 and F values. Those factors which has very low R^2 and F values are dropped out from analysis hence new output and input variables are taken as shown in Table 1.1.

Output variables RPK, TK, and U

Input variables FS, TE and TOE

Table 1.1: Values of Input and Output Variables taken for Calculations.

Year 2007-2008	INPUTS		
DMU	Fleet Size (FS)	Total Employee (TE)	Total Operating Expenses/Capital in Millions Rs (TOE)
1. AI Express	18	833	10372
2. Indian Airlines	72	17688	98365
3. Alliance Air	20	768	3595
4. Jet Airways	81	13163	93995.9
5. Jet Lite	25	2557	19147
6. Air Deccan	41	3310	28123.3
7. Paramount	5	611	2449.1
8. Spice jet	19	2321	15595.3
9. Kingfisher	41	5023	35051.1
10. Go Air	6	1198	6589.4
11. Indigo	17	2074	13451.1

Year 2007-2008	OUTPUTS		
DMU	Revenue Pax Km Performed (millions)	Tonnes Km Performed (millions)	Aircraft Utilization (hrs)
1. AI Express	4224	435	52626
2. Indian Airlines	12782	1284	224025
3. Alliance Air	370.4	40.3	17529
4. Jet Airways	8564.1	833	267953
5. Jet Lite	3809.6	369.1	76893
6. Air Deccan	6259	549.3	111185
7. Paramount	286.8	25.3	12270

8. Spicejet	4343.3	412.6	50324
9. Kingfisher	5141.5	426.4	113969
10. Go Air	1530	134.9	18170
11. Indigo	3861.9	384.5	54540

Table 2: Correlation between Input and Output Variables

	Correlation	**Matrix**	
Outputs\Inputs –>	**Fleet Size**	**Total Employee**	**Operating Expenses**
RPK	0.8860	0.9161	0.9163
TKP	0.8721	0.9225	0.9158
OTP	-0.3469	-0.2691	-0.2775
A/C Utilization	0.9854	0.9307	0.9785
Canc. Rate	0.0158	-0.0307	0.0201
Wt. Load Factor	-0.5697	-0.3831	-0.4824
Pax Load Factor	-0.3567	0.2992	-0.2732

Table 3: Regression (Multiple) Analysis Table Showing R^2 and F Values

	R^2	**F values**
Revenue Pax Kms Vs. Inputs	0.851	13.316
Tonnes Kms Performed Vs. Inputs	0.854	13.676
A/C Utilization Vs. Inputs	0.996	628.343
On Time Performance Vs. Inputs	0.221	0.660
Cancellation Rate Vs. Inputs	0.158	0.438
Wt. Load Factor Vs. Inputs	0.325	4.324
Pax Load Factor Vs. Inputs	0.127	1.312

Calculation

In evaluating any number of DMU's, with any number of inputs and outputs:

- requires the inputs and outputs for each DMU to be specified
- defines efficiency, Banker et al., (1986), for each DMU as a weighted sum of total outputs divided by a weighted sum of inputs [total input]; where all efficiencies are restricted to lie between zero and one (i.e between 0% and 100%).
- in calculating the numerical value for the efficiency of a particular DMU weights are chosen so as maximize its efficiency as described by Charnes et al., (1994), thereby presenting the DMU in the best possible light.

Linear Programming Formulation

As per the model proposed by Charnes et al., (1978) linear programming formulation is done as:

To calculate the efficiency of Jet Airways (4):

Maximize E4

subject to:

$E1= (4224Wrpk + 435Wtk + 52626Wu) / (18Wfs + 833Wte + 10372Wtoe)$

$E2= (12782Wrpk + 1284Wtk + 224025Wu) / (72Wfs + 17688Wte + 98365Wtoe)$

$E3= (370.4Wrpk + 40.3Wtk + 17529Wu) / (20Wfs + 768Wte + 3595Wtoe)$

$E4= (8564.1Wrpk + 833Wtk + 267953Wu) / (81Wfs + 13163Wte + 93995.9Wtoe)$

$E5= (3809.6Wrpk + 369.1Wtk + 76893Wu) / (25Wfs + 2557Wte + 19147Wtoe)$

$E6= (6259Wrpk + 549.3Wtk + 111185Wu) / (41Wfs + 3310Wte + 28123.3Wtoe)$

$E7= (286.8Wrpk + 25.3Wtk + 12270Wu) / (5Wfs + 611Wte + 2449.1Wtoe)$

$E8= (4343.3Wrpk + 412.6Wtk + 50324Wu) / (19Wfs + 2321Wte + 15595.3Wtoe)$

$E9= (5141.5Wrpk + 833Wtk + 267953Wu) / (41Wfs + 5023Wte + 35051.1Wtoe)$

$E10= (1530Wrpk + 134.9Wtk + 18170Wu) / (6Wfs + 1198Wte + 6589.4Wtoe)$

$E11= (3861.9Wrpk + 384.5Wtk + 54540Wu) /(17Wfs + 2074Wte + 13451.1Wtoe)$

$0 <= E1 <= 1$
$0 <= E2 <= 1$
$0 <= E3 <= 1$
$0 <= E4 <= 1$
$0 <= E5 <= 1$
$0 <= E6 <= 1$
$0 <= E7 <= 1$
$0 <= E8 <= 1$
$0 <= E9 <= 1$
$0 <= E10 <= 1$
$0 <= E11 <= 1$
$Wrpk >= 0$
$Wtk >= 0$
$Wu >= 0$
$Wfs >= 0$
$Wte >= 0$
$Wtoe >= 0$

Where:

- E1 is the efficiency of AI Express (expressed as a fraction)
- E2 is the efficiency of Indian Airlines (expressed as a fraction)
- E3 is the efficiency of Alliance Air (expressed as a fraction)
- E4 is the efficiency of Jet Airways (expressed as a fraction)
- E5 is the efficiency of Jet Lite (expressed as a fraction)
- E6 is the efficiency of Air Deccan (expressed as a fraction)
- E7 is the efficiency of Paramount (expressed as a fraction)
- E8 is the efficiency of Spice jet (expressed as a fraction)
- E9 is the efficiency of Kingfisher (expressed as a fraction)
- E10 is the efficiency of Go Air (expressed as a fraction)
- E11 is the efficiency of Indigo (expressed as a fraction)

- Wrpk is the weight attached to Revenue Pax Km
- Wtk is the weight attached to Tonnes km performed
- Wu is the weight attached to Aircraft Utilization
- Wfs is the weight attached to Fleet Size
- Wte is the weight attached to Total Employees
- Wtoe is the weight attached to Total Operating Expenses/Capital

To calculate the efficiency of the other airlines objective function has been changed (e.g. maximize E1 to calculate the efficiency of AI Express). We have associated non-negative weights with each input and output measure.

The above optimization problem is a nonlinear problem and hence difficult to solve numerically.

It is converted into a linear programming problem (Charnes et al., 1978).

Maximize $\{E4 = (8564.1Wrpk + 833Wtk + 267953Wu)\}$

Subject to

$$(81Wfs + 13163Wte + 93995.9Wtoe) = 1$$

$$(4224Wrpk + 435Wtk + 52626Wu) - (18Wfs + 833Wte + 10372Wtoe) <= 0$$

$$(12782Wrpk + 1284Wtk + 224025Wu) - (72Wfs + 17688Wte + 98365Wtoe) <= 0$$

$$(370.4Wrpk + 40.3Wtk + 17529Wu) - (20Wfs + 768Wte + 1595Wtoe) <= 0$$

$$(8564.1Wrpk + 833Wtk + 267953Wu) - (81Wfs + 13163Wte + 93995.9Wtoe) <= 0$$

$$(3809.6Wrpk + 369.1Wtk + 75393Wu) - (25Wfs + 2557Wte + 19147Wtoe) <= 0$$

$$(6259Wrpk + 549.3Wtk + 111185Wu) - (41Wfs + 3310Wte + 28123.3Wtoe) <= 0$$

$$(286.8Wrpk + 25.3Wtk + 12270Wu) - (5Wfs + 611Wte + 2449.1Wtoe) <= 0$$

$$(4343.3Wrpk + 412.6Wtk - 50324Wu) - (19Wfs + 2321Wte + 15595.3Wtoe) <= 0$$

$$(5141.5Wrpk + 333Wtk + 267953Wu) - (41Wfs + 5023Wte + 35051.1Wtoe) <= 0$$

$$(1530Wrpk + 134.9Wtk + 18170Wu) - (6Wfs + 1198Wte + 5539.4Wtoe) <= 0$$

$$(3861.9Wrpk + 384.5Wtk + 54540Wu) - (17Wfs + 2074Wte + 13451.1Wtoe) <= 0$$

$Wrpk >= 0$

$Wtk >= 0$

$Wu >= 0$

$Wfs >= 0$

$Wte >= 0$

$Wtoe >= 0$

The above is a linear program

The numerator of $(8564.1Wrpk + 833Wtk + 267953Wu) / (81Wfs + 13163Wte + 93995.9Wtoe)$ is known as the weighted output and the denominator is known as the weighted input for Jet Airways. The above LP problem for calculating efficiencies of all airlines is solved by using solver using excel spreadsheet. The above calculation is also done through Frontier Analyst software also.

Results and Conclusions

Results

The efficiency scores of all 11 domestic airlines have been estimated for the year 2007-2008. Table 4 present the efficiency score obtained from CCR model and Frontier Analyst software.

The study reveal that only one airline Indigo has the maximum degree of relative efficiency (100%) out total 11 domestic airlines while Jet Airways has relative efficiency of 99%. Go Air and Indian Airlines has relative efficiency of 95.6% each. Alliance Air has the least relative efficiency of 25.9%. Hence Alliance Air is the most inefficient airline and Indigo is the most efficient of all the 11 domestic airlines under study.

Frontier Analyst Software is also used to calculate the relative efficiency of all the 11 domestic airlines. The study reveals that Indigo, Jet Airways, Go Air and Air India Express are the most efficient while Kingfisher is the least efficient of all 11 domestic airlines under study. The result shows that of the 11 airlines, 4 airlines are relatively most efficient as they efficiently convert their inputs into outputs.

The model suggests that other non efficient airlines can become overall efficient by adjusting its operation to the associated target point determined by the efficient airlines that defines the frontier region. Table 5 and Table 6 present the target values of all the inputs and outputs for inefficient regions along with the percentage reduction in inputs.

It is be observed from the Table 6 that for inefficient airline, for e.g. Alliance Air, 70% of fleet size, 63.9% of total employees and 3.9% of operating expenses has to be reduced by Alliance Air if it has to operate at the level of efficient regions (keeping the output same). Similarly for other inefficient airlines, the result can also be interpreted.

Contribution

Application of DEA framework to airline industry provide a comparative study of relative performance of different airlines under study which will help to take the future course of action for its competitive advantage. The outcome of the project provides the opportunity to benchmark with the best airline. Also the outcome of the project translates the performance indicator into effective management strategies.

Furthermore, these performance measures go beyond simply describing efficiency or effectiveness; It is able to assist planners and policy-makers in developing or adopting strategies which will be more successful in improving performance.

Recommendations

It needs to be appreciated that the airline industry is going through difficult times. The scope for increase in revenue is rather limited due to overcapacity that has led to low fares and low yields. The focus has to be on cost control therefore operating expenses, number of employees and fleet strength are the factors which needs to be controlled. From the above study it is clear that airlines has to cut costs in order to be on the frontier, they must adopt a model based on Low Cost Airline like that of Indigo which is on the efficient frontier. Besides cost reduction, all DMUs must look at improving the productivity of employees and elimination of restrictive work practices. For airlines whose business model is based on Low cost, they can benchmark with Indigo while for full services airlines, can benchmark with Jet Airways.

The results of this study are dependent upon the choice of inputs and outputs and the way that DEA measures efficiency. Some further refinement of the adopted inputs and outputs measure to reflect the efficiency of the regions seems to be necessary in future research.

Appendix 1: Total Domestic Indian Carriers (DMUs) under Study

(i) AI Express
(ii) Indian Airlines
(iii) Alliance Air
(iv) Jet Airways
(v) Jet Lite
(vi) Air Deccan
(vii) Paramount
(viii) Spice jet
(ix) Kingfisher
(x) Go Air
(xi) Indigo

Table 4: Efficiency of all DMUs

DMU	Efficiency By Software	Efficiency Calculated
1. AI Express	1.000	0.920
2. Indian Airlines	0.960	0.956
3. Alliance Air	0.961	0.259
4. Jet Airways	1.000	0.990
5. Jet Lite	0.981	0.938
6. Air deccan	0.888	0.832
7. Paramount	0.987	0.728
8. Spicejet	0.936	0.838
9. Kingfisher	0.866	0.843
10. Go Air	1.000	0.956
11. Indigo	1.000	1.000

Table 5: Target values of Inputs for a DMU to be on the Efficient Frontier

DMU		*INPUTS*	
	Target Fleet	**Target Employees**	**Target Expenses**
1. AI Express	18	833	10372
2. Indian Airlines	69	9351	63057
3. Alliance Air	6	277	3455
4. Jet Airways	81	13163	93996
5. Jet Lite	25	2509	18039
6. Air deccan	36	2940	24547
7. Paramount	4	194	2418
8. Spicejet	18	2101	14599
9. Kingfisher	36	4350	28263
10. Go Air	6	1198	6589
11. Indigo	17	2074	13451
AVERAGE	29	3545	25344

Table 6: Target values of Inputs in % for a DMU to be on the Efficient Frontier

TARGET INPUTS (%)->	**% Fleet**	**% Employees**	**% Expenses**
1. AI Express	0.0	0.0	0.0
2. Indian Airlines	-4.0	-47.1	-35.9
3. Alliance Air	-70.0	-63.9	-3.9
4. Jet Airways	0.0	0.0	0.0
5. Jet Lite	-1.9	-1.9	-5.8
6. Air deccan	-11.2	-11.2	-12.7
7. Paramount	-16.1	-68.2	-1.3
8. Spicejet	-6.4	-9.5	-6.4
9. Kingfisher	-13.4	-13.4	-19.4
10. Go Air	0.0	0.0	0.0
11. Indigo	0.0	0.0	0.0
AVERAGE	-11.2	-19.6	-7.8

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Factors Influencing the Choice of Domestic Airlines in Chandigarh-An Empirical Study

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The Indian aviation industry is one of the fastest growing aviation industries in the world with private airlines accounting for more than 75 per cent of the domestic aviation market (as of 2006) The industry is growing at a compound annual growth rate (CAGR) of 18 per cent. The country has 454 airports and airstrips, of which 16 are designated as international airports All this has resulted into increasing the intensity of competition amongst air carriers in India Delivering high quality service to passengers is important so that airlines can survive and strengthen their competitiveness. Service quality conditions influence an airline's competitive advantage and with this comes market share and ultimately profitability (Morash and Ozment, 1994) Airlines have responded to the competitive pressures in many ways, one of which has been service quality. It extends to in-flight service, reservation, ticketing, airport service, reliability, employee service, flight availability, passenger satisfaction, pricing (value), and airline image This paper empirically examines the factors which influence the choice of airline in Chandigarh tri city.

Keywords- *Air Carriers, Aviation Market, Service Quality*

Introduction

Aviation Industry in India is one of the fastest growing aviation industries in the world. With the liberalization of the Indian aviation sector, aviation industry in India has undergone a rapid transformation. From being primarily a government-owned industry, the Indian aviation industry is now dominated by privately owned full service airlines and low cost carriers. Private airlines account for around 75% share of the domestic aviation market. Earlier air travel was a privilege only a few could afford but today air travel has become much cheaper and can be afforded by a large number of people. The origin of Indian civil aviation industry can be traced back to 1912, when the first air flight between Karachi and Delhi was started by the Indian State Air Services in collaboration with the UK based Imperial Airways. It was an extension of London-Karachi flight of the Imperial Airways. In 1932, JRD Tata founded Tata Airline, the first Indian airline. After independence only nine air transport companies were carrying both air cargo and passengers. These were Tata Airlines, Indian National Airways, Air service of India, Deccan Airways, Ambica Airways, Bharat Airways Orient Airways and Mistry Airways After partition Orient Airways shifted to Pakistan In early 1948, Government of India established a joint sector company, Air India International Ltd in collaboration with Air India (earlier Tata Airline) with a capital of Rs. 2 crore and a fleet of three Lockheed constellation aircraft. The inaugural flight of Air India International Ltd took off on June 8, 1948 on the Mumbai-London air route. The Government nationalized nine airline companies vide the Air Corporations Act, 1953. Accordingly it established the Indian Airlines Corporation (IAC) to cater to domestic air travel passengers and Air India International (AI) for international air travel passengers. The assets of the existing airline companies were transferred to these two corporations. This Act ensured that IAC and AI had a monopoly over the Indian skies. A third government-owned airline, Vayudoot, which provided feeder services between smaller cities, was merged with IAC in 1994. These government-owned airlines dominated Indian aviation industry till the mid-1990s. In April 1990, the Government adopted open-sky policy and allowed air taxi- operators to operate flights from any airport, both on a charter and a non charter basis and to decide their own flight schedules, cargo and passenger fares. In 1994 the Indian Government, as part of its open sky policy, ended the monopoly of IA and AI in the air transport services by repealing the

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Air Corporations Act of 1953 and replacing it with the Air Corporations (Transfer of Undertaking and Repeal) Act, 1994. Private operators were allowed to provide air transport services. Foreign direct investment (FDI) of up to 49 percent equity stake and NRI (Non Resident Indian) investment of up to 100 percent equity stake were permitted through the automatic FDI route in the domestic air transport services sector. However, no foreign airline could directly or indirectly hold equity in a domestic airline company. By 1995, several private airlines had ventured into the aviation business and accounted for more than 10 percent of the domestic air traffic. These included Jet Airways Sahara, NEPC Airlines, East West Airlines, ModiLuft Airlines, Jagsons Airlines, Continental Aviation, and Damania Airways. But only Jet Airways and Sahara managed to survive the competition. Meanwhile, Indian Airlines, which had dominated the Indian air travel industry, began to lose market share to Jet Airways and Sahara. Today, Indian aviation industry is dominated by private airlines and these include low cost carriers such as Kingfisher Airlines, Deccan Airlines, GoAir, SpiceJet, Indigo Airlines etc, who have made air travel affordable. Airline industry in India is plagued with several problems. These include high aviation turbine fuel (ATF) prices, rising labor costs and shortage of skilled labor, rapid fleet expansion and intense price competition among the players. But one of the major challenges facing Indian aviation industry is infrastructure constraint. Airport infrastructure needs to be upgraded rapidly if Indian aviation industry has to continue its success story. Some steps have been taken in this direction. Two of India's largest airports-Mumbai and New Delhi-were privatized recently. Two Greenfield airports have come up at Bangalore and Hyderabad in southern India. Investments are pouring into almost all aspects of the industry, including aircraft maintenance, pilot training and air cargo services.

Literature Review

Service quality is a consumer's overall impression of the relative inferiority/superiority of the organisation and its services (Bitner and Hubbert, 1994). Importance of service quality revealed that delivering high quality in the service industries produces cost savings, better profits, and market share. Delivering high service quality has been recognised as the most efficient way of ensuring that a company's offerings are uniquely positioned in a market filled with look-alike competitive offerings (Parasuraman et al., 1991). Companies that implement a customer-driven strategy based on service quality differ characteristically from those companies that do not and it is found that the former companies are usually more successful (Whiteley, 1991). In the airline industry service quality is important because delivering high quality service to passengers is essential for airlines' survival. Airline service quality is a significant driver of passenger satisfaction, passenger loyalty and passengers' choice of airline (Alotaibi, 1992; Ostrowski, O'Brien and Gordon, 1993, Ritchie, Johnston and Jones, 1980). Hence, the delivery of high service quality becomes a marketing requirement as competitive pressures on air carriers increase (Ostrowski et al., 1993).

Customer satisfaction is defined as a judgment made on the basis of a specific service encounter (Cronin and Taylor, 1992). Customer satisfaction is a very important concept in marketing and it is the ultimate goal for service operations. Increasing customer satisfaction leads to improved profits, lower marketing expenditures and positive word-of-mouth communication (Reichheld, 1990). Most companies assume that there is a strong relationship between customer satisfaction and consumer behaviour. Therefore, they believe that higher customer satisfaction leads to higher purchase intention and word-of-mouth communication. A number of researchers have attempted to explore the relationship that exists between satisfaction and service quality and their impact on customer purchase intentions. However, there have been many debates about the distinction and association between service quality and customer satisfaction. Since competition created by deregulation in the airline industry has become more intensive and as the notion of service quality in airline operations has consequently become of increasing importance, satisfaction in the airline industry has thus received much attention (Ostrowski et al., 1993). In a competitive environment, satisfying passengers in transportation services has a beneficial effect on a carrier's long-term survival (Rhea and Shrock, 1987). Airlines should know how their services are meeting their passengers' needs and wants, because the extent to which passenger needs and wants are met has come to mean passenger satisfaction/dissatisfaction Several researchers have applied service quality related theories and methods in the airline industry (Alotaibi, 1992; Chang and Yeh, 2002; Chen, 1997; Kaynak, Kucukemiroglu and Kara, 1994; Ostrowski et al., 1993; Sultan and Simpson, 2000).

Objectives

To study the perception of Airline Customers in Chandigarh about the Airline Cost & Inclusions.

To study the sources used by Airline Customers in Chandigarh for selecting Airline.

To study the factors responsible for selecting Airline by customers in Chandigarh.

Methodology

Data were collected through self administered questionnaire from 391 respondents (391 questionnaires out of 500 were usable) in Chandigarh Tri City. Data of air travellers was taken from three travel agents. Data was analyzed by descriptive statistics for respondents' perceptual responses relating to airline service, inclusions, information sources and airline characteristics. The characteristics of airline important in the selection decision were analysed by tools like Mean, SD & Factor Loading to provide more information on the structure underlying the selection of a specific airline.

Analysis & Findings

Table 1: Perception of Airline Customers about Airline Cost & Inclusions

Perception of Airline Cost & Inclusion					
		Response(%)^a			
Question	**Yes**	**No**	**No Response**		
Airlines Price					
1. Do you feel that there has been an increase in airfare recently?	91.2	3.1	5.7		
2. Do you feel that airfare will continue to rise?	89.4	3.6	7		
3. If airfare continue to rise will you continue traveling by air?	41.6	47.1	11.3		
4. If airfare increase, will you decrease your air travel frequency?	8.4	42.4	49.2		
Incusions					
5. Are you aware of inclusions in your air ticket?	83.1	13.7	3.2		
6. Do you repeat airline frequently?	9.7	6.5	83.8		
7.Was your air ticket purchased through a travel agent?	62.7	25.4	11.9		
	Extremely Unimportant		**Neither**	**Extremely Important**	
	1	2	3	4	5
8. How important is the decision to travel by air?	1.2	1.5	5.9	22.7	68.7
9. How important is the decision to travel from a specific airline?	2.1	3.2	19.2	42.4	33.1
^{a}n=391					

Table 1 shows respondents' perceptions of Airline Costs and Inclusions. These perceptions were measured by a series of dichotomous questions. In terms of Airline Costs, 91.2% indicated they believe there has been a recent increase in airfare and 89.4% felt that increases in airfare are likely to continue. Their sensitivity to these costs is seen in the third question. The respondents were split on whether they will continue travelling by air even if fare rises (41.6 vs. 47.1%). Only 8.4% agreed that they would decrease their air travel if airfare rises. Over 42 4% said they would not decrease their air travel frequency and 49.2% did not respond. Among other factors, this high non- response rate may be the result of consumers' lack of knowledge about current airfares or their inability to envision the magnitude of airfare increase. Overall, the data generally indicate that respondents do not intend to change their air travel pattern as a result of hike in prices. Above table also indicates respondents' perceptions of their service coverage & inclusions. According to question 5, 83.1% of the respondents were aware of all inclusions. Of the total sample, 9.7% said that they repeat airlines. 62.7% of the respondents said that they purchase tickets through their agents whereas 25.4% purchase it through other sources. The respondents also asked about the importance of air travel specifically & over 90% of the respondents indicated that it is very important to travel by air & by a specific airline is also very important for them, said almost 80% of the respondents.

Table 2: Information Sources & their Vitality in terms of influencing selection of Airline

Information Source used in selecting Airlines				
	Selection Source[a]			**Most Vital Source[b]**
Information Source	**Yes**	**No**	**No Response**	
Advice from family members	21.4	41.3	37.3	18.1
Advice from friends	16.2	54.7	29.1	5.6
Television advertising	4.8	61.2	34	0
Radio advertising	3.2	66.3	30.5	0
Direct mail advertising from airline company	11.2	56.8	32	3.1
Internet	11.5	54.2	34.3	3.1
Other information from airline	22.9	38.9	38.2	18.2
Personal experience	34.9	31.4	33.7	42
Other sources	13.8	51.2	35	0
[a]n=422				
[b]n=192 (Accounts for 199 non responses of a total of 391 completed Questionnaires)				

Table 2 lists the information sources used by respondents in selecting an airline. The information source cited by many subjects were Personal Experience & Other Information from airline, 34.9% & 22.9% respectively. Advice from family members & other sources also given importance. Advice from friends, television advertising, radio advertising, direct mail advertising, internet sources were average. Non response (approximately 35%) for all categories of information sources used in selecting airline was there. The reason(s) for this non response cannot be ascertained from the data. However, because respondents were not pre-screened to determine the actual decision maker in carrier choice, the non responses may reflect the fact that some subjects were not decision makers and therefore could not answer the questions. This table also indicates the percentage of respondents who believed each information source was the most important source in the selection decision. One information source, personal experience was rated by around 35% of the respondents as the critical factor used in selecting an airline.

Table 3: Customers' Response to the Factors Responsible for Selecting an Airline

Response to Factors Responsible							
for Selection Decisions		**Response (%)^a**					
Factors	**EUI**	**UI**	**NUINI**	**I**	**EI**	**Mean^b**	**SD**
Airline Image	0.6	19.6	6.2	41.4	32.2	4.38	0.68
After-Sales Service	5	1.4	10.2	41.1	46.8	4.32	0.72
Agent	9.5	11.9	26.7	35.7	16.2	3.37	1.21
Add on Services	1.7	4.3	4.8	41.6	47.6	4.29	0.78
Customer Service	1.2	2.4	6.3	37.5	52.6	4.38	0.84
Past Experience	0.2	1 0	3.6	28.3	67	4.61	0.53
Ticket Price	1	5.5	16.2	55.2	22.1	3.92	0.81
Fuel Surcharge	1. 0	5	11.9	50.4	31.7	4.07	0.68
Travel Insurance Cost	1.4	52	17.95	52.4	23.1	3.91	0.91
Dropin & Dropout Cost	0.5	1.2	10	50.8	37.5	4.24	0.72
Food Cost Inclusion	2.1	4.3	8.3	49.2	36.1	4.13	0.96
Shopping in the Air	62.4	22.1	6.5	5.3	5.7	1.62	1.94
Airside Services	78.7	15.7	3.2	2.4	0	1.98	1.78
Clubbing of Travel Package with Air Ticket	38.7	24.2	22.1	8.4	6.7	1.72	2.1
Airline Infrastructure & Set Up at Airport	4.8	18.7	24.4	40.2	11.9	3.61	1.01
^{a}n=391							
^{b}Where Extremely Unimportant							
is 1 & Extremely Important=5							

EUI=Extremely Unimportant, UI=Unimportant, N=Neither, I=Important, EI=Extremely Important

Table 3 presents data on the respondents' perceptions of airline characteristics' importance in the selection decision. Subjects indicated their perceptions on a 5-interval scale ranging from extremely unimportant to extremely important. Characteristics having a mean score of four or higher indicate their importance in the airline selection decision. The airline characteristics with the highest rating for importance in the selection decision are a past experience. Over 95% of respondents indicated this characteristic is important in the decision. The least important characteristics are the airside services (X = 5.7), clubbing of travel package with air ticket (X= 6.7) and shopping in the air (X = 0). Virtually every characteristic of the airline except airside service, clubbing of travel package with air ticket & shopping in the air were indicated as being important in the selection decision.

Table 4: Factor Analysis of Airline Characteristics Important in Selection Decision

Factor Analysis of Factors Responsible for Selection			
Factor	**Component**	**Factor Loading**	**% Variance Explained**
Service Characteristics	Airline Image	0.48	
	After Sales Service	0.52	
	On Board Service	41	
	Add on Services	0.41	74.3
Travel Agent Characteristics	Customer Service	0.78	
	Travel Agent Image	0.74	15.7
Cost Characteristics	Ticket Price	0 61	
	Fuel Surcharge	52	
	Travel Insurance Cost	0.49	
	Drop In & Drop Out Cost	39	
	Food Cost Inclusion	0.45	10
		Total	100

Results of the factor analysis are reported in Table 4. Though each of the characteristics makes some contribution to each of the factors, the structure was determined by using the size of the loadings to assign the characteristics to the factors. Three main factors were identified as being most important in the selection decision. Factor 1 includes Image of the airline company, After Sales Service, On Board Service & Add on Services. These factors explain 74.3% of the variance in airline characteristics important in the selection decision. Factor 2, comprising the agent's ability to answer questions and the agent's ability to explain product & its inclusions & Customer Service, accounts for 15.7 % of the variance in the factor structure. Factor 3 includes Ticket Price, Fuel Surcharge, Travel Insurance Cost, Drop in Drop out Facility and the inclusion of Food Cost. This factor accounts for 10% of the variance. From the factor analysis it appears that airline companies must be concerned with the quality of customer service if they expect to influence consumers during the selection process. However, as Table 4 reveals, several other airline characteristics can influence consumers as they approach the eventual decision point.

Conclusion

According to the IATA (International Air Transportation Association), service items for airlines include seat reservation, selling ticket, airport check-in, cabin service, baggage delivery and the subsequent services after arriving at destinations, etc. In general, from a passenger's perspective, the service items of airline should include flight frequency, flight safety, cabin food and beverage, seating, flight on schedule, etc. On the other hand, from an operator's perspective, the airline industry generally pays more attention on safety, comfort, convenience, accuracy, and hospitality, etc. These all perspectives have one thing in common which is Customer service & experience is based upon the customer service primarily & that is what the outcome of this study as well. Many characteristics appear to affect consumers' selection of an airline company. Thus marketing strategies developed by airline companies should incorporate some of these characteristics depending upon their corporate objectives. Subjects indicated they base airline selection on factors like past experience, On Board Service, Ticket Price, Inclusions. The respondents were also aware of and sensitive to the inclusions. Despite cost increases, subjects indicated they would not decrease their air travel frequency. Airside services, clubbing of travel package with air ticket & on board shopping were considered very less important as far as decision to choose a specific airline was concerned. Our findings suggest that airline companies should develop marketing strategies oriented towards customers as different service parameters are given a high importance & degree of importance varies over quite a few parameters as far as this study goes.

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Impact of HRD Intervention on Women Entrepreneurship Development in Jharkhand

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The role of gender in economic development process has been increasingly recognized as crucial, both in terms of potential for success and in the nature of the impact of particular development strategies and programs Gender becomes especially important to consider in case of micro-enterprise approach, as the traditional home-centered roles of women can make it far easier for women to participate in such programs as opposed to the more traditional, large and medium scale enterprises The paper attempts to identify the influence of two HRD interventions, viz Education and Training on women entrepreneurship development in the state of Jharkhand The sample for the study comprises sixty two (62) women entrepreneurs in Dhanbad district of Jharkhand state. A survey, using questionnaire method, has been conducted to obtain data on the nature of enterprise, socio economic profile of the entrepreneurs and importance of Training and Education interventions in entrepreneurship development Right-tailed "z" Test has been used to test the formulated hypothesis on Education and Training interventions The findings of the study shows that there is no role of Education in starting an enterprise but it plays an important role in improving the entrepreneurial quality and performance of the enterprise

Keywords: *Women Entrepreneurship, HRD Intervention, Training and Education*

Introduction

Women emancipation has been a matter of concern for social scientists for centuries, yet the plight of women still leaves a lot to be desired. Prominent issues that need to be addressed are illiteracy, domestic violence, health, education, capacity building and female mortality rate among many others. It is now being realized that perhaps the causality is somewhere else and the approach has to be different in order to improve the condition of the fair sex at large. Against this backdrop focus is now on empowerment of women so that they can think of their own well being rather than being dependent on others. Physical and biological differences between males and females notwithstanding, the crux lies in economic independence. Perhaps, it is this realization that has made policy makers think about empowering rural women through entrepreneurial initiatives.

Entrepreneurship is the foundation of a new model of development for all developing countries. Developed nations like USA, UK, and Japan have acknowledged that it is the 'spirit of enterprise' among their people that has transformed their small agro based industries into big industrial giants. In a newer more grass root approach for developing nation like India, the focus is on enabling the poor to improve their lives by launching their own small businesses more popularly known as "Micro - Enterprises". These small ventures are easier to sustain because of their strong links to local people, less capital requirement and greater environmental sensitivity. To promote national production, balanced regional development, distribution of economic power and provide better employment opportunities, and most essential empowering women, entrepreneurship is an effective instrument. A woman though equal to men in population, is subject to many deprivations even in this modern sophisticated world. The role of gender in economic development process has been increasingly recognized as crucial, both in terms of potential for success and in the nature of the impact of particular development strategies and programs. Gender becomes especially important to consider in case of microenterprise approach, as the traditional home centered roles of women can make it far easier for women to participate in such programs as opposed to the more traditional, large scale, top down programs. At present, women involvement

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in economic activities are marked by a low work participation rate, excessive concentration in the unorganized sector and employment in less skilled jobs. The present women entrepreneurial activity in India is not very high. According to 2001-02 census there are only 1,37,534 women enterprises in the registered small scale industry (SSI) sector which is only 10% of the total and as per the Annual Report of MSME, GOI for the year 2001-02, 8.32% of these SSI are managed exclusively by women. So, any strategy aimed at economic development without involving women who constitute half of the world population will be lop-sided. It also shows that there exist a definite gap between the present status of women entrepreneurial activity and their potential. This gap grows up manifold in the case of women hailing from rural area. This gap can be bridged with the help of Human Resource Development (HRD) intervention. Impact of education, safe drinking water and sanitation health care, Training and capacity building, on socio economic development is quite evident. Rural population of India especially women have hardly any access to these macro level HRD activities. Micro level HRD interventions such as Motivation, Leadership, Awareness, Management skill and Communication skill also have a positive impact on the development of women entrepreneurship.

Thus, the present study attempts to assess the role of macro level HRD interventions in motivating women to take up entrepreneurial activity among women entrepreneurs. The region chosen for the study is the state of Jharkhand, India as it is a developing state and has a lot of potential for entrepreneurial growth. The analysis is primarily focused on the impact of two HRD interventions, viz. Training and Education on entrepreneurial success, which ultimately leads to economic empowerment of women. The study also tries to identify the various factors that can make entrepreneurship Training programmes aimed for women entrepreneurs more effective. The current paper has five sections Section 1 introduces the paper and states the objective of the study. Section 2 provides a selective review of literature on the subject. The research methodology adopted for the study is discussed in Section 3. Section 4 presents the results and analysis of the study and Section 5 concludes the paper.

Review of Literature

The issue of women entrepreneurship has received the attention of various researchers and academicians from various perspectives. One stream of existing literature deals with the socio-economic and psychological characteristics, which influences the performance of women entrepreneurs while another group of researchers have focused on the challenges faced by the women entrepreneurs. A good amount of research work is also available relating to the impact of HRD interventions on entrepreneurship development. As the present study aims to analyze the influence of two HRD interventions, viz. Training and Education on women entrepreneurial success, this section will provide selective review of literature in context to the impact of Education and Training interventions.

International Context

In International context, there have been many studies on the impact of education, ranging from its impact on attitudes to those focusing on the direct effect of schooling on individual productivity and earnings and national economic indicators. Rao (2006) observes that the average amount of education of the labour force by one year raises GDP by 9% according to World Development Report published in 1991. Sluis and Praag (2008) in their paper provided a review of empirical studies related to the impact of formal schooling on entrepreneurship selection and performance in industrial countries. The findings of the study suggest that the impact of education on selection into entrepreneurship is insignificant. The same view is echoed in a previous study carried out by Kangashraju and Pekkala (2002). They analyze the effect of education of the self-employed on the success of their firm during downturn and upturn in Finland and they find that for those who are highly educated and run an enterprise, exit probability is lower during bust but higher in boom. The study also reflects the assumption that all highly educated people will choose entrepreneurship as career is wrong, but once they get into it, firms run by highly educated have higher growth probabilities than those run by less educated ones. Barwa (2003) in its report shows how a business management Training skills program can have a significant impact on Business aspect, Employment/Job aspect, personal and social aspect. Nawaz (2009) categorized different factors of women entrepreneurship development based on institution theory and puts education and access to information under cultural cognitive factor and illustrates how lack of education suppress a women's desire to become an entrepreneur. Garba (2010) not only mentions the importance of education in the entrepreneurship development in Nigerian context but also emphasizes the need and importance of entrepreneurship education. The paper proposes an entrepreneurship education framework with an explanation of what and how it should be rather than what it is.

There are lot of studies available relating to impact of training on entrepreneurship development as well. Habibullah (1987) observes that training is an effective tool for entrepreneurship development among women in Bangladesh. Botha, Nieman and Vurren (2006) in their paper statistically proved that training provided under women entrepreneurship development program enhances skill and improves the business performance of women entrepreneurs. It also encourages potential entrepreneurs to start their business and established entrepreneurs to start multiple businesses. Sannikova (2007) mentions in a conference paper that Training and Mentoring is one of the key variables that support the creation of an enabling environment for women entrepreneurship.

Indian Context

In India women entrepreneurship is a recent topic which started only after 1970's with the introduction of the women's decade (1975-1985) and which mostly picked up in the late 80's. This was particularly visible only in the metropolitan and state capitals in India. It took a much longer time to percolate to the other cities and municipalities. Hence research and publications in India on this issue is almost negligible.

Leach et al., (2001) discusses the report of DFID titled "The Impact of Training on Women's Micro Enterprise Development", in which Indian entrepreneurs engaged in silk rearing practices have been surveyed, and it has been identified that there is significant improvement in their traditional way of doing this activity after training. Dash (2003) in his paper attempts to analyse empowerment of the Scheduled Caste women, especially with reference to West Bengal. The author considers education as the most powerful input in the process of empowerment as well as creating human capital. Ekka (2003) examines Management and Technical Education (MTE) as a facilitating factor for the purposes of human resource development and as a consequence of overall development. Bertaux and Crable (2007) illustrate how Indian women especially in rural area can become a successful entrepreneur with the help of technology and training. Lakshmi and Prajeetha draw an inference on the basis of data collected that difference in educational level accounted for the difference in level of income among the respondent (Rathakrishnan, 2008).

Methodology

Scope of Study and Sample Selection

Women entrepreneurship in Jharkhand is of recent origin. Though traditional activities like sale of vegetables and fruits have been taken up by the rural women since long, entrepreneurship on modern lines such as in manufacturing, trading and service concerns are found from only one decade or less. So far, there are hardly any study available relating to rural women entrepreneurship in Jharkhand. It is not even possible to make a census list of women entrepreneurs in Jharkhand due to lack of organized effort from the government agencies. Hence rural women in Jharkhand managing any type of business activity, be it Manufacturing, Trading or Service is selected for the study. The names and addresses of the rural women have been obtained from the database of Micro, Small and Medium Enterprise Development Institute (MSME-DI), Dhanbad district of Jharkhand. These rural women had attended the training programmes in MSME-DI and now own an enterprise. The list obtained from MSME-DI, Dhanbad consist of names of 105 women entrepreneurs within the district, but complete responses are obtained from only 62 women entrepreneurs.

Survey Instrument

The data for the study is collected by conducting a survey using structured questionnaire method. The questionnaire is constructed to meet the research objective addressed in the paper and consists of three sections. A brief outline of the background and objective of the study precedes the set of questions.

The first section comprises questions on socio economic background of women entrepreneurs and incorporates information on name, age, gender, religion, caste, educational level, marital status, work experience, nature of family, and size of family, household income, level of support and religiosity of the owner. The second section incorporate set of questions determining the role of Education and Training in entrepreneurship development. The questions are closed ended based on five point rating scale, ranging from 1 to 5 with 1 as very low to 5 as very high. The third section of the questionnaire contains ten dimensions that are identified as important factors making training programmes more effective. List of dimensions are mainly taken from the existing literature and is provided in Table 1. The respondents are asked to rate them on a five point rating scale, according to the degree of importance they place on each dimension.

Table 1: List of Factors required for Making Training Programmes Effective

Sl. No	Dimensions
1	Proper design according to abilities and aptitudes
2	Imparting meaningful information
3	Simple and understandable method
4	Short session
5	Knowledgeable and enthusiastic trainer
6	Feedback mechanism
7	Accessible location
8	Training inputs
9	Practical orientation
10	Managerial techniques

Hypothesis Testing

A set of four separate hypotheses for assessing the role of Education and Training towards women entrepreneurship development has been formulated. The null hypotheses for testing the women entrepreneurs' perception on the importance given to education and training are as follows:

H_{0A} : There is no role of Education towards starting an enterprise among rural women entrepreneurs.

H_0: $\mu_A=3$

H_1: $\mu_A>3$

H_{0B} : There is no role of Education in developing the entrepreneurial qualities among rural women entrepreneurs.

H_0: $\mu_{B=3}$

H_1: $\mu_{B>3}$

H_{0C} : There is no role of Education in improving the performance of women run enterprise.

H_0: $\mu_C=3$

H_1: $\mu_C>3$

H_{0D} : There is no impact of Training on women entrepreneur towards setting up an enterprise.

H_0: $\mu_D=3$

H_1: $\mu_D>3$

For all four hypotheses, a right – tailed z test has been used and tested at a significance level of 5%. As we want to know whether the mean is greater than three, an upper tailed z-test was considered appropriate.

Results and Discussions

Socio Economic Background of Women Entrepreneurs

The respondents of this study are rural women entrepreneur who attended training program of MSME-DI, Dhanbad and now own an enterprise. Table 2 presents the distribution of some important socio economic and organisational characteristics of the respondents.

Table 2: Socio Economic Background of Women Entrepreneurs and Nature of Enterprise

Age	Below 20	24%
	20-29	37%
	30-39	24%
	40-49	13%
	50-59	0%
	60 & above	2%
Education	Illiterate	2%
	Less than matric	21%
	Matriculation	18%
	Intermediate	29%
	Graduate	30%
Religion	Hindu	84%
	Muslim	10%
	Sikh	3%
	Christian	3%
Community	Forward	38%
	Backward	32%
	St	15%
	Sc	2%
	Muslim+ Christian	13%
Marital Status	Married	52%
	Unmarried	45%
	Widow	3%
Nature of Family	Joint	35%
	Nuclear	65%
Size of Family	1-3	20%
	4-5	52%
	6-8	22%
	Above 8	6%
Technical education	No technical education	59%
	Certificate	31%

	Diploma	10%
	Graduate	0%
	Post graduate	0%
Household Income	Less than 50, 000	21%
	50,000-1 Lakh	32%
	1-2 Lakh	25%
	2-4 Lakh	18%
	Above 6 Lakh	4%
Age of Enterprise	0-2	15%
	3-5	26%
	6-8	35%
	9-11	18%
	Above 12	6%
Type of Enterprise	Manufacturing	27%
	Service	58%
	Trading	15%
Mode of acquisition of Enterprise	Founded	65%
	Inherited	22%
	Purchased	13%

The women entrepreneurs in the sample are mostly in the age group of 20-29 years (37%) and another 24% entrepreneurs are in the age group of 30-39. The sample mean age of the entrepreneurs is only 30 years, which suggest that women in this region have started their own micro enterprise at a very young age. A large proportion of the sample women entrepreneurs are Hindus (34%) and the remaining 10%, 3% and 3% belong to Muslim, Christian, and Sikh community respectively. About 38% of these women entrepreneurs come from forward community, 32% from backward community, Schedule Tribe (ST) constitutes 15%, Schedule caste (SC) is 2% and rest 13% belongs to Muslim and Christian community. As regard the marital status of women entrepreneurs, 52% are married, 45% are unmarried and the rest 3 % are widow. The presence of 45% unmarried women entrepreneur indicates that even young unmarried women are opting for entrepreneurship.

Regarding the education level of the entrepreneurs, 30% of the entrepreneurs are graduate, 29% of them are educated till higher secondary level, followed by 18% having matriculation degree and 18% are less than matriculate. Only one woman in the sample is illiterate who is engaged in Papad making business. Those who got education less than matriculation are mainly engaged in trading and household based activity as this kind of business doesn't require much education. The level of education of women is found to be quite high compared to what is expected in a rural area. One reason behind this may be the fact that MSME usually have certain educational qualification criteria for selecting women participants for training programmes. Few years ago the educational qualification criteria for selecting participants was Class VIII pass, but this has now been raised to class X pass, i.e. having Matriculation degree. However, majority (59%) of the women does not have any technical education, 31% though have undergone vocational courses and 10% have diplomas in technical education.

As regard the type of family, 65% hails from nuclear family and remaining 35% belong to joint family. The average size of family for the sample is six, and there are 52% of women with family members between 4 to 5, followed by 22 % with 6-8 members. The size of the family determines the time which a women needs to cater to the needs of the family in addition to looking at the enterprise. Table 2 shows that 57 % women entrepreneur's annual family income is between 50,000-2 Lakh. Thus the annual household income earned is not quite adequate for such a large family.

Regarding the nature of enterprise, majority of the sample enterprises are only a decade old with a mean of six years. The youngest enterprise in the sample is only a one year old enterprise. The data is in consonance with the general feeling that businesses were the privilege of only men about a decade ago in this region. However, the trend has changed and the last decade has seen remarkable growth in the number of women enterprises. This trend may also be attributed to the promotional activities initiated by the government for encouraging women entrepreneurship. An interesting result of the study is that majority of the sample (65%) are the founder of their own business. Only 22% of women have inherited their father's business, whereas remaining 13% have purchased their business. This shows that an overwhelming proportion of the sample women are first generation entrepreneurs and have not forcefully inherited the business.

The sample enterprises belong to service sector (58%), manufacturing (27%) and trading sector (14%). Table 3 shows the list of activities taken up by the sample women entrepreneurs under these three broad sectors. 72% of women entrepreneurs who entered into service sector own one or more beauty parlours. The reason of such a high percentage could be attributed to the feminine nature of this business and facing fewer hurdles from family as well. It is followed by tailoring business whose percentage is 14%. Other significant activity under service sector is handicraft business. Under manufacturing sector, phenyl making is a major activity which has been taken up by 24% of women followed by scented stick (Agarbatti), shoe making, and furniture making activities. Under Trading sector, 56% of women entrepreneurs run their grocery shop and remaining 44% own a flour mill.

Table 3: List of Activities undertaken by Sample Entrepreneurs

Type of Enterprise (Service) Total No=36		
Particulars	**Number**	**Percentage**
Beauty parlour	26	72%
Tailoring shop	5	14%
Handicraft	4	11%
Boutique	1	3%
Type of Enterprise (Manufacturing) Total No=17		
Particulars	**Number**	**Percentage**
Phenyl making	4	24%
Shoe making	3	18%
Furniture making	3	18%
Scented sticks(Agarbatti)	3	18%
Papad making	2	12%
Pickle making	1	6%
Copy making	1	6%

Type of Enterprise (Trading) Total No=9		
Particulars	**Number**	**Percentage**
Grocery	5	56%
Flour mill	4	44%

Results of Hypothesis Testing

The result of the z test for all the four hypotheses has been presented in Table 4. The table presents the mean, standard error of the mean and the critical value of z at .05 significance level.

Table 4: Results of z test for Testing all Four Hypothesis

Sl. No.	Mean	Std. Dev.	Observations	z value
H_{0A}	3.027	.461	62	.459
H_{0B}	3.246	.746	62	2.597*
H_{0C}	3.505	1.839	62	2.163*
H_{0D}	4.017	0.792	62	9.947*

*significant at 5% significance level

Comparing the calculated Z - value and the table value of the first hypothesis, it can be observed that the sample mean lies inside the acceptance region of the normal curve. Thus, we accept the null hypothesis, which suggests that Education doesn't play any role toward starting an enterprise among the rural women entrepreneurs of this region. For all the other three hypotheses, if we compare the calculated Z - value and the table value, it can be observed that the sample means lies outside the acceptance region, thereby rejecting all the three null hypotheses in favour of the alternative hypotheses. Hence, it can be inferred that education helps in improving the entrepreneurial quality of the rural women entrepreneurs and the overall performance of the enterprise. In addition, rejection of the fourth null hypothesis indicates that Training is highly useful to women entrepreneurs for setting up an enterprise.

Ranking of Dimensions required for making training programmes effective

The women entrepreneurs have been asked to rate a set of the ten dimensions on a five point rating scale, according to the degree of importance they place on each dimension. The ranking of the ten factors according to the preference of respondents is presented in Table 5. The dimensions are ranked based on the mean score of the responses obtained.

Table 5: Ranking of Training Programme Effectiveness Factors by Mean Responses

RANK	FACTOR	MEAN SCORES
1	Short session	3.87
2	Simple and understandable method	3.838
3	Accessible location	3.688
4	Proper design according to abilities and aptitudes	3.6774
5	Imparting meaningful information	3.5967
6	Knowledgeable and enthusiastic trainer	3.3387
7	Training inputs	3.064
8	Practical orientation	2.9838
9	Managerial techniques	2.3571
10	Feedback mechanism	2.2580

The most preferred factor for effective training programme is 'Short Duration'. This may be because the women feel that if there are shorter sessions then they can understand and appreciate the content of the training more efficiently. The next ranked factor is 'Simple and Understandable Method', which indicates that the approach used in training programmes should be very simple to understand. The dimension 'Accessible location' is the third choice in terms of women entrepreneurs' preference. This dimension is perceived as important because they think that participants can better make use of the training facility if it is conducted in a location that is easily accessible to them. The dimension 'Managerial Techniques' and 'Feedback Mechanism' have been selected as the least preferred factor for effective training. This suggests that the respondents who are from rural regions does not recognize the importance of Managerial techniques and Feedback mechanism well.

Conclusion

The paper aims to analyze the role of Education and Training on women entrepreneurship development in micro enterprises of Dhanbad, Jharkhand. The study has laid some groundwork to explore the potential factors required for effective training programmes, upon which a more detailed evaluation can be made. Further work is required to incorporate new variables to better reflect the other macro level HRD interventions like health. The influence of micro level HRD interventions should also be studied. This will help to develop new relationships for explaining and empowering the women entrepreneurs in Jharkhand, India. Given the diversity and cultural heterogeneity in the state of Jharkhand and the importance of setting up new micro enterprises in the state, one possibility may be to investigate the impact of HRD interventions across different castes and tribal groups in Jharkhand, which shall be useful to policy makers while formulating interventions across different castes and tribal groups in Jharkhand.

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Emotional Intelligence as a Predictor of Performance in Insurance Sector

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There has been an increase in the interest in the concept of emotional intelligence in different organizations in past two decades. This is due to increase in research in this area after Daniel Goleman's work in 1995 People started realizing the importance of non-cognitive intelligence in their lives. According to researchers, Emotional intelligence is an ability of an individual which results into increased work performance This is an attempt to explore the relationship between emotional intelligence and work performance of the front-line executives in Indian Insurance sector This is an empirical study, conducted by collecting data from 100 executives on two parameters: Emotional Intelligence and Work Performance. Correlation and Regression analysis was conducted to find out the relationship and the results signify the role of emotional intelligence in work performance of executives in insurance industry. The findings of this study can have great implication for insurance organizations, HR professionals, trainers and researchers

Keywords: *motional Intelligence, Performance Management, Insurance Sector*

Introduction

Role of service sector in Indian economy is growing day by day. In the service industry, the most important factor for success is: employee-customer interface. Customer interface is build by front line executives and their role is to attract, build and maintain customers. Industries like Banking, Insurance, Retail, Call Centers, Hospitals, Tourism and Telecommunication etc. require employees with the best behavior. At their level the competencies required to build strong relation with the customer are, communication skills, empathy, influencing skills, relationship building, emotional control, flexibility and stress tolerance. All this is nothing else but 'emotional intelligence'.

Emotional intelligence is the non-cognitive part of human intelligence. Early researches focused only on the cognitive part of intelligence i.e. IQ and have proved that IQ is the most important factor in Work performance. But in 1920 Thorndike came up with the concept of Social Intelligence (Thorndike, 1920) and after that Gardner came up with the concept of Multiple Intelligence (Gardner Howard, 1983) and mentioned about the importance of non-cognitive aspect of intelligence. But the concept of Emotional Intelligence got public attention only after the publication of research work of Daniel Goleman, 1995. After this, the interest of organizations in 'Emotional intelligence' area has increased. According to Goleman," it takes more than traditional cognitive intelligence (IQ) to be successful at work. It also takes the ability to restrain negative feelings such as anger and self-doubt, and instead focus on positive ones such as confidence, congeniality, optimism, conscientiousness, motivation, empathy and social competence. Success in business requires the empathic ability to gauge a customer's mood and the interpersonal skill to decide when to pitch and when to keep quiet." And this is Emotional intelligence.

Various researches after this have been done in this field and the individuals have started realizing that emotions have a great role to play in their personal and professional life. Not only individuals but companies also have started realizing that encouraging emotional intelligence skills is a vital component for any organization because it is directly linked with the performance of the employees and so they are building their management training programs on this premise.

Emotional Intelligence

The term Emotional Intelligence was coined by Salovey and Mayer (1990). According to them, Emotional Intelligence (EI) is the ability to monitor one's own and others' feelings and emotions, and to use this information to guide and manage one's thinking and actions. Goleman, Boyatzis and Mckee

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(2002) have mentioned four factors of emotional intelligence:

(i) Self Awareness

(ii) Social Awareness

(iii) Self Management

(iv) Relationship Management

First two factors belong to Experiential Emotional Intelligence (associated with experience of one's own and other's emotions) and last two factors belong to Strategic Emotional Intelligence because it is related to, use of information about emotions, in thinking, judging, planning and implementing. In the present study two main factors (divided into 13 sub factors) of emotional intelligence have been taken:

- Intrapersonal Factors:
  - Emotional Realm (ER)
  - Assertiveness (A)
  - Independence (I)
  - Self Regard (SR)
  - Happiness (H)
  - Optimism (O)
  - Stress Tolerance (ST)
  - Emotional Control (EC)
  - Flexibility (F)
- Interpersonal Factors:
  - Empathy (E)
  - Interpersonal Relations (R)
  - Influence (INF)
  - Communication (COM)

Work Performance

When we talk about job performance, it is always measured against the standards set by the organization. Every organization has certain performance evaluation measures by which they check the efficiency of their employees. Generally we divide job performance into two dimensions (Borman, Schmit and Motowidlo, 1997):

- Task Performance:
  - Completion of the job
  - Ensuring quality
  - Technical know how
- Contextual Performance:
  - Interpersonal behavior
  - Co-operation with others
  - Initiative
  - Following rules and procedures
  - Ready to take responsibility

In the present study, 10 factors to measure the performance of front line executives have been taken into account. These 10 factors cover both the dimensions and can be generalized for all insurance organizations: Quality of Work, General management capabilities, knowledge, communication, conflict resolution, team work, ethics, initiative, innovative thinking and problem solving, Loyalty/ Integrity and trust.

Literature Review

Number of studies have been conducted in this area and proved the importance of emotional intelligence in work performance (Abraham, 2004; Austin, 2004; Punia, 2005; Carmeli, 2003; Cherniss, 2001; Cooper and Sawaf, 1997; Dalip Singh, 2001; Gabriel and Griffiths, 2002; Goleman et al., 2002; Higgs, 2004; Law, Wong and Song, 2004; Lyons and Schneider, 2005 Mitch Anthony, 2003; Rathi and Rastogi, 2008; Mishra and Mohapatra, 2010; Stein and Book, 2006; Sy, Tram, and O' Hara, 2006; Weisinger, 1998 and Varca, 2004). Not only in individual performance but emotional intelligence plays a great role in performance of an individual in the teams and as a leader (Dulewicz and Higgs, 2003; Goleman, Boyatzis and McKee, 2002; Radha Sharma, 2006, 2007).

Role of Emotional Intelligence in Service sector has also been studied by various researchers (Othman, Abdullan and Ahmad, 2008; Bardzil and Slaski, 2003; Kernbach and Schutte, 2005; Sojka and Deeter-Schmeiz, 2002). EI abilities have been able to meet effective work performance in the case of customer care executives (Mathew, 2006), retail executives (Duckett and Macfarlane, 2003), call center employees (Higgs, 2004), KPO executives (Ghosh and Chakraborty, 2008), account officers (Bachman, Stein, Campbell and Sitarenios, 2000), counselors (Martin, Easton, Wilson, Takemoto and Sullivan, 2004), professional salespersons (Rozell, Pettijohn, and Parker, 2006; Jennings and Palmer, 2007) and nurses (Carson and Carson, 1998; McQueen, 2004).

Research Methodology

Hypothesis

H1: There is significant impact of socio-economic profile of respondents on their emotional intelligence

H2: There is positive relation between Emotional Intelligence and Work Performance of Employees

The universe of the study is confined to Insurance Sector in India. The survey population of the study included those employees who are in direct contact with the customer (Front line executives). The study was conducted on the basis of sample taken from the area of NCR (Delhi and Neighborhood cities, Faridabad, Gurgaon, Noida). A sample of 100 respondents was taken randomly from the survey population.

Data Collection

Since the nature of the proposed study is empirical, it was completed mainly with the help of primary data. Primary data on emotional intelligence and employee's performance was collected and administered through well-structured questionnaire. Two questionnaires were designed, one for the measurement of Emotional Intelligence of the employees and the other one for the measurement of Work Performance of the employees. The first questionnaire was having 52 statements for 13 sub factors of emotional intelligence. And the second questionnaire was having 40 statements for 10 factors of performance evaluation. The secondary information was collected from available literature on the proposed topic from Journals, Books, Newspaper and Magazines; and Internet.

Data Analysis Tools and Techniques

Collected data was analyzed by appropriate statistical tools such as percentages, averages, graphs and different statistical tests (Correlation & Regression, ANOVA, t-test etc.). SPSS software was used for computerized data processing and analysis.

Analysis and Interpretation

Analysis was done to investigate correlations between emotional intelligence and work performance of the employees. Table 1 shows the minimum, maximum, mean and standard deviation values of Total EQ Score and Total work performance score.

Table 1: Descriptive Statistics

	N	Minimum	Maximum	Mean	Std. Deviation
EQ_SCORE	100	148	223	**183.04**	18.506
PERFORMANCE SCORE	100	85	191	**151.44**	17.549

From the table it is clear that Average EQ of insurance sector executives is 183, that is a 'Medium score' and Average Performance score is 151, which is again a 'Medium score'.

To find the relationship between various emotional intelligence factors (Independent Variable) and Performance score (Dependent Variable), bivariate correlation was applied.

Table 2 clearly shows a positive correlation among all the factors of emotional intelligence (with one another), with Total EQ (Emotional Quotient) score and with Total Performance Score. And also there is positive correlation between Total EQ Score and Total Performance Score at significance level 0.01. The coefficient of correlation is .741, which is significantly high.

Table 2: Correlations between Emotional Intelligence Variables, Total EQ Score and Total Performance Score

		ER	A	I	SR	H	O	ST	EC	F	E	R	INF	COM	EQ	Performance
ER	Pearson Correlation	1	.421**	.111	.340**	362**	.229*	.061	.009	232*	.375**	.433**	326**	453**	.566**	.435**
	Sig. (2-tailed)		.000	.274	.001	.000	.022	.547	.929	.020	.000	.000	.001	.000	.000	.000
A	Pearson Correlation	.421**	1	.269**	194	399**	.248*	-.005	.132	.214*	.062	.366**	.216*	.341**	.493**	.233*
	Sig. (2-tailed)	.000		.007	.053	.000	.013	.963	.192	.033	.537	.000	.031	.001	.000	.020
I	Pearson Correlation	.111	.269**	1	.219*	.268**	.388**	.341**	.371**	344**	.126	.274**	.245*	.186	.535**	.337**
	Sig. (2-tailed)	.274	.007		.028	.007	.000	.001	000	.000	.210	.006	.014	.063	.000	.001
SR	Pearson Correlation	.340**	.194	.219*	1	.561**	.437**	.279**	.006	.108	.491**	.364**	.589**	.544**	.666**	.492**
	Sig. (2-tailed)	.001	.053	.028		.000	.000	.005	.956	.283	.000	.000	.000	.000	.000	.000
H	Pearson Correlation	.362**	.399**	.268**	.561**	1	.577**	.371**	.155	.353**	.384**	.457**	.424**	.502**	.755**	.503**
	Sig. (2-tailed)	.000	000	.007	.000		.000	.000	.122	.000	.000	.000	.000	.000	.000	.000
O	Pearson Correlation	.229*	.248*	.388**	.437**	.577**	1	.530**	.224*	376**	251*	.468**	.378**	.398**	.721**	571**
	Sig. (2-tailed)	.022	.013	.000	.000	.000		.000	.025	.000	.012	000	.000	.000	.000	.000
ST	Pearson Correlation	061	-.005	.341**	.279**	.371**	.530**	1	.285**	.325**	.123	.126	.272**	.371**	.534**	.490**
	Sig. (2-tailed)	.547	.963	001	.005	.000	.000		.004	.001	.223	.211	.006	.000	.000	.000
EC	Pearson Correlation	.009	.132	.371**	.006	.155	.224*	.285**	1	.168	.103	078	-.098	.050	.325**	.220*
	Sig. (2-tailed)	.929	.192	000	.956	.122	.025	004		.095	.310	.440	.332	.624	.001	.028
F	Pearson Correlation	.232*	.214*	.344**	.108	.353**	376**	.325**	.168	1	.075	.506**	.320**	.447**	.585**	.433**
	Sig. (2-tailed)	.020	.033	000	.283	000	.000	.001	.095		.457	.000	001	.000	.000	.000
E	Pearson Correlation	.375**	.062	.126	.491**	.384**	.251*	.123	.103	.075	1	.378**	.271**	.327**	.510**	.401**
	Sig. (2-tailed)	.000	.537	.210	.000	.000	.012	.223	.310	.457		.000	.006	.001	.000	.000
R	Pearson Correlation	.433**	.366**	.274**	.364**	.457**	.468**	.126	.078	.506**	.378**	1	.297**	.485**	.679**	.465**
	Sig. (2-tailed)	.000	.000	.006	.000	.000	.000	.211	.440	.000	.000		.003	.000	.000	.000
INF	Pearson Correlation	.326**	.216*	.245*	.589**	.424**	.378**	.272**	-.098	.320**	.271**	.297**	1	.508**	.616**	.480**
	Sig. (2-tailed)	.001	.031	.014	.000	.000	.000	.006	.332	.001	.006	.003		.000	000	.000
COM	Pearson Correlation	.453**	.341**	.186	544**	.502**	.398**	.371**	.050	.447**	.327**	.485**	.508**	1	.721**	.648**
	Sig. (2-tailed)	.000	.001	.063	.000	.000	.000	.000	.624	000	.001	.000	.000		.000	.000
EQ	Pearson Correlation	.566**	.493**	.535**	666**	.755**	.721**	.534**	.325**	.585**	.510**	.679**	.616**	.721**	1	.741**
	Sig. (2-tailed)	.000	.000	000	.000	.000	.000	.000	.001	.000	.000	.000	.000	.000		.000
Performance	Pearson Correlation	.435**	.233*	.337**	.492**	.503**	.571**	.490**	.220*	.433**	.401**	.465**	.480**	.648**	.741**	1
	Sig. (2-tailed)	.000	.020	.001	.000	.000	.000	.000	.028	.000	.000	.000	.000	.000	.000	

**. Correlation is significant at the 0.01 level (2-tailed).

*. Correlation is significant at the 0.05 level (2-tailed)

Table 3: Correlations between Work Performance Variables, Total Performance Score and Total EQ Score

		Quality Of Work	Mgt. Capability	Know-ledge	Comm-unication	Conflict Resoultion	Team Work	Ethics	Initiative	Inn. & Prob. Solving	Loyalty, Integrity	Perfor-mance	EQ
Quality of Work	Pearson Correlation	1	.748**	643**	.534**	.473**	.493**	.642**	.720**	.566**	.695**	.821**	612**
	Sig (1-tailed)		.000	000	.000	.000	000	000	.000	.000	.000	.000	.000
Mgt Capability	Pearson Correlation	748**	1	.549**	.425**	.525**	.467**	645**	.784**	.749**	.657**	.821**	.675**
	Sig. (1-tailed)	000		.000	.000	.000	000	.000	.000	.000	.000	.000	.000
Knowledge	Pearson Correlation	.643**	.549**	1	686**	.463**	461**	.495**	.705**	.426**	.471**	738**	.611**
	Sig. (1-tailed)	000	000		.000	.000	.000	000	000	000	.000	.000	.000
Communi-cation	Pearson Correlation	.534**	.425**	686**	1	.740**	.542**	.501**	.570**	.491**	.506**	743**	507**
	Sig. (1-tailed)	000	.000	.000		.000	.000	.000	000	.000	.000	.000	.000
Conflict Resoultion	Pearson Correlation	473**	.525**	.463**	.740**	1	.676**	.585**	.476**	.547**	.666**	.756**	.464**
	Sig. (1-tailed)	000	000	000	.000		.000	.000	.000	.000	.000	.000	.000
Team Work	Pearson Correlation	493**	.467**	.461**	.542**	.676**	1	773**	.517**	.494**	830**	.780**	.451**
	Sig. (1-tailed)	000	000	.000	.000	.000		.000	.000	.000	.000	000	000
Ethics	Pearson Correlation	642**	.645**	.495**	501**	585**	.773**	1	.741**	.598**	.860**	.857**	.594**
	Sig. (1-tailed)	000	000	000	.000	.000	000		.000	.000	.000	.000	.000
Initiative	Pearson Correlation	.720**	.784**	.705**	.570**	.476**	517**	.741**	1	682**	.644**	.859**	.719**
	Sig. (1-tailed)	000	.000	000	.000	.000	.000	000		.000	.000	.000	.000
Innovation and Problem Solving	Pearson Correlation	.566**	.749**	.426**	.491**	.547**	.494**	598**	.682**	1	.548**	.764**	.711**
	Sig. (1-tailed)	000	000	000	.000	.000	.000	000	.000		.000	.000	000
Loyalty, Integrity	Pearson Correlation	.695**	.657**	.471**	.506**	.666**	.830**	.860**	.644**	.548**	1	860**	.562**
	Sig. (1-tailed)	.000	.000	.000	000	.000	.000	.000	.000	000		.000	.000
Perfor-mance Score	Pearson Correlation	821**	.821**	.738**	743**	756**	.780**	.857**	.859**	.764**	.860**	1	741**
	Sig. (1-tailed)	.000	.000	.000	.000	.000	000	.000	000	.000	.000		.000
EQ Score	Pearson Correlation	.612**	675**	.611**	.507**	.464**	451**	.594**	719**	711**	.562**	.741**	1
	Sig. (1-tailed)	000	000	.000	.000	.000	000	.000	000	.000	.000	000	

**. Correlation is significant at the 0 01 level (1-tailed)

Relation between Work Performance parameters, Total Performance score and EQ Score

Similarly to predict the relationship between 10 factors of work performance, Total performance score and Total EQ score, bivariate correlation has been applied.

Table 3 clearly represent a positive correlation among all the factors of work performance with one another, with total Performance Score and total EQ (Emotional Quotient) score at significance level 0.01. The correlation coefficient varies from 0.42 to 0.86.

Degree of Dependency of Performance Score on EQ Score

Regression Analysis has been done to analyze the strength of relationship between dependent (performance score) and independent variable (EQ score). Table 4 shows the value of constants:

Table 4: Regression Analysis

Model	Un-standardized Coefficients		Standardized Coefficients	T	Sig.
	B	Std. Error	Beta		
1. (Constant)	**22.861**	11.838		1.931	.056
EQ_SCORE	**.702**	.064	**.741**	10.916	.000

a. Dependent Variable: PERFORMANCE SCORE

So, the regression equation is:

Y= .702 (x) +22 861 Y= Dependent Variable, X=Independent Variable

For a given value of Independent Variable, the value of Dependent variable can be calculated by this equation. The value of Beta Coefficient is (.741) high. It tells that the dependent variable (Performance Score) is having high degree of dependency on independent variable (EQ Score).

Role of Emotional Intelligence Factors in Predicting Work Performance

ANOVA is conducted to find out which of the 13 variables of emotional intelligence was majorly responsible for overall work performance. Respondents were divided according to their Total performance score: High (160-200), Medium (120-159) and Low (Below 120). Table 5 represents 'F' value of all 13 factors of EI:

Table represent that all the variables of emotional intelligence, except 'emotional control', are significant in predicting overall work performance at significance level 0.01 and 0.05. But the major contribution is of 'Optimism' (with F value=62.7). So in insurance sector 'Optimism' is the major contributing factor towards Performance of an executive.

Impact of Gender on EQ Score

Further, T-test is conducted to find out whether male and female differ in terms of emotional intelligence or not. Means of all factors of emotional intelligence are compared for males and females in the Table 6:

Table 5: ANOVA

		Sum of Squares	Df	Mean Square	F	Sig.
EMOTIONAL REALM	Between Groups	125.328	2	62.664	11.433	.000
	Within Groups	531.632	97	5.481		
	Total	656.960	99			
ASSERTIVENESS	Between Groups	35.564	2	17.782	3.758	.027
	Within Groups	458.996	97	4.732		
	Total	494.560	99			
INDEPENDENCE	Between Groups	89.158	2	44.579	10.550	.000
	Within Groups	409.882	97	4.226		
	Total	499.040	99			
SELF REGARD	Between Groups	138.987	2	69.494	13.423	.000
	Within Groups	502.173	97	5.177		
	Total	641.160	99			
HAPPINESS	Between Groups	152.961	2	76.481	17.668	.000
	Within Groups	419.879	97	4.329		
	Total	572.840	99			
OPTIMISM	Between Groups	367.375	2	183.687	62.742	.000
	Within Groups	283.985	97	2.928		
	Total	651.360	99			
STRESS TOLERANCE	Between Groups	208 031	2	104.015	25.835	.000
	Within Groups	390.529	97	4.026		
	Total	598.560	99			
EMOTIONAL CONTROL	Between Groups	24.502	2	12.251	2.042	.135
	Within Groups	581.937	97	5.999		
	Total	606.440	99			

FLEXIBILITY	Between Groups	163.840	2	81.920	15.851	.000
	Within Groups	501.320	97	5.168		
	Total	665.160	99			
EMPATHY	Between Groups	28.981	2	14.491	3.007	.054
	Within Groups	467.379	97	4.818		
	Total	496.360	99			
RELATION	Between Groups	123.099	2	61.549	13.094	.000
	Within Groups	455.941	97	4.700		
	Total	579.040	99			
INFLUENCE	Between Groups	167.658	2	83.829	20.092	.000
	Within Groups	404.702	97	4.172		
	Total	572.360	99			
COMMUNICATION	Between Groups	159.940	2	79.970	29.628	.000
	Within Groups	261.820	97	2.699		
	Total	421.760	99			

Table represent that all the variables of emotional intelligence, except 'emotional control', are significant in predicting overall work performance at significance level 0.01 and 0.05. But the major contribution is of 'Optimism' (with F value=62.7). So in insurance sector 'Optimism' is the major contributing factor towards Performance of an executive.

Impact of Gender on EQ Score

Further, T-test is conducted to find out whether male and female differ in terms of emotional intelligence or not. Means of all factors of emotional intelligence are compared for males and females in the Table 6:

Table 6: T-test to show Impact of Gender on Emotional Intelligence Variables

	FEMALE (N=40)	MALE (N=60)	t-Value	p-level (two-tailed)
TOTAL EMOTIONAL REALM	14.7333	14.1000	-1.235	.220
TOTAL ASSERTIVENESS	12.9000	12.8500	-.111	.912
TOTAL INDEPENDENCE	13.3333	14.1000	1.690	.095
TOTAL SELF REGARD	14.4667	15.2500	1.508	.136
TOTAL HAPPINESS	14.0667	15.2500	2.341	.022*

TOTAL OPTIMISM	14.2333	15.9500	3.390	.001**
TOTAL STRESS TOLERANCE	12.3667	14.2500	3.932	.000**
TOTAL EMOTIONAL CONTROL	13.1000	13.7000	1.150	.254
TOTAL FLEXIBILITY	14.1333	14.3500	.395	694
TOTAL EMPATHY	14.5667	14.6000	.075	.940
TOTAL RELATION	15.0667	14.0000	-2.236	.028*
TOTAL INFLUENCE	12.7333	14.8500	4.506	.000**
TOTAL COMMUNICATION	14.2000	14.5000	.708	.481
EQ_SCORE	179.90	187.75	2.029	.046*

From the Table 6, it is clear that male and females are significantly different in case of following emotional intelligence factors: Happiness, Optimism, Stress Tolerance, Relations, Influence and Total EQ Score (Significance level 0.01** and 0.05*). Happiness, Optimism, Stress Tolerance and Influence is better in males and Relations are better in Females. Major finding from this table is that in insurance sector Males has more Emotional Intelligence than Females.

Impact of Other Demographic Variables on EQ Score

ANOVA has been applied to test whether other demographic variables of executives, as: Marital Status, Income, Qualification and Age, has some significant impact on their EQ Score or not. Table 7 to Table 14 depicts the result:

According to marital status different groups of respondents are: Bachelor; Married, no children in education; Married, with children in education; Divorced and Widowed. Mean EQ of different groups is shown in Table 7:

Table 7: Descriptive Statistics (Marital Status and EQ)

	N	Mean	Std. Deviation	Std. Error	95% Confidence Interval for Mean		Minimum	Maximum
					Lower Bound	Upper Bound		
BACHELOR	36	173.72	16.760	2.793	168.05	179.39	148	199
MARRIED, NO CHILDREN IN EDUCATION	26	188.08	18.249	3.579	180.71	195.45	158	214
MARRIED, WITH CHILDREN IN EDUCATION	34	188.76	17.662	3.029	182.60	194.93	157	223
DIVORCED	2	174.00	.000	.000	174.00	174.00	174	174
WIDOWED	2	197.00	.000	.000	197.00	197.00	197	197
Total	100	183.04	18.506	1.851	179.37	186.71	148	223

Table 8: ANOVA (Marital Status and EQ)

	Sum of Squares	Df	Mean Square	F	Sig. (p)
Between Groups	5452.654	4	1363.163	4.552	.002
Within Groups	28451.186	95	299.486		
Total	33903.840	99			

From Table 8, it is clear that results are significant as p<.05. Hence, Null hypothesis (H0) is rejected. So, mean EQ score of different groups (according to marital status) is significantly different. If we look at Table 7, Married people have higher EQ in comparison to Bachelors.

According to income per annum, different groups of respondents are: 1,00,000-3,00,000; 3,00,001-5,00,000; 5,00,001-8,00,000. Mean EQ of different income groups is:

Table 9: Descriptives (Income and EQ)

	N	Mean	Std. Deviation	Std. Error	95% Confidence Interval for Mean		Minimum	Maximum
					Lower Bound	Upper Bound		
1,00,000-3,00,000	44	180.41	15.934	2.553	175.26	185.56	148	207
3,00,001-5,00,000	40	183.20	13.761	2.966	177.20	189.20	154	223
5,00,001-8,00,000	16	189.88	21.282	5.320	178.53	201.22	157	214
Total	100	183.04	18.506	1.851	179.37	186.71	148	223

Table 10: ANOVA (Income and EQ)

	Sum of Squares	Df	Mean Square	F	Sig. (p)
Between Groups	1053.054	2	526.527	1.555	.216
Within Groups	32850.786	97	338.668		
Total	33903.840	99			

Table 10 shows that results are not significant (p>.05). So null hypothesis (H0) is accepted i.e. Mean EQ scores are not significantly different for different income levels

According to age, respondents are divided into following categories: 21-25 years, 26-30 years, 31-35 years, 35-40 years and above 40 years. The mean EQ scores of different age groups are:

Table 11: Descriptives (Age and EQ)

	N	Mean	Std. Deviation	Std. Error	95% Confidence Interval for Mean Lower Bound	95% Confidence Interval for Mean Upper Bound	Minimum	Maximum
21-25	26	175.08	16.987	3.331	168.22	181.94	148	199
26-30	38	180.53	16.721	2.713	175.03	186.02	154	214
31-35	20	193.90	15.724	3.516	186.54	201.26	160	214
36-40	6	170.67	20.403	8.329	149.26	192.08	157	197
ABOVE 40	10	199.00	14.345	4.536	188.74	209.26	184	223
Total	100	183.04	18.506	1.851	179.37	186.71	148	223

Table 12: ANOVA (Age and EQ)

	Sum of Squares	Df	Mean Square	F	Sig.(p)
Between Groups	7713.387	4	1928.347	6.995	.000
Within Groups	26190.453	95	275.689		
Total	33903.840	99			

Table 12 shows that P value is .000, which is significant ($p<0.05$). So, Null hypothesis (H0) is rejected i.e. mean EQ scores are significantly different for different age groups. Table 11, represents that as age of an individual increases, the emotional intelligence also increases.

According to qualification, respondents are divided into following groups: Graduate, Post graduate and Professional Qualification. The mean EQ of different qualification groups is:

Table 13: Descriptives (Qualification and EQ)

	N	Mean	Std. Deviation	Std. Error	95% Confidence Interval for Mean Lower Bound	95% Confidence Interval for Mean Upper Bound	Minimum	Maximum
GRADUATE	22	181.09	19.888	4.240	172.27	189.91	154	213
POST GRADUATE	12	181.17	17.974	5.189	169.75	192.59	159	199
PROFESSIONAL QUALIFICATION	66	184.03	18.336	2.257	179.52	188.54	148	223
Total	100	183.04	18.506	1.851	179.37	186.71	148	223

Table 14: ANOVA (Qualification and EQ)

	Sum of Squares	Df	Mean Square	F	Sig.
Between Groups	190.416	2	95.208	.274	761
Within Groups	33713.424	97	347.561		
Total	33903.840	99			

From table 14 it is evident that relation is not significant (p>.05). So, mean EQ scores are not significantly different as per different educational qualification of employees.

These findings are not same for all the sectors. According to the job profile, the results vary from sector to sector.

Discussion

The objectives of this study were: To determine the relationship between emotional intelligence and work performance and to determine relationship between demographic variables and emotional intelligence of executives in insurance sector. Based on the analysis carried out the conclusion of the study are drawn as follows:

(i) There is a significant relation between emotional intelligence and work performance of an employee. The results are in concurrence with the findings of early researchers also (already mentioned in the literature review). According to Goleman (1995), EQ is majorly responsible for a person's success in life whereas IQ (Intelligence Quotient) has only minor contribution. This is because cognitive skills are responsible for problem solving and decision making aspects only but while working in organization, an executive has to do a lot which involve non-cognitive skills also. He /she has to gauge the mood of customer, colleagues, subordinates and superiors; manage stress at work; should have social skills and they should have impulse control as they have to deal with all type of people. So, if the employees have high emotional intelligence they can perform better.

(ii) All the factors of emotional intelligence other than 'Emotional Control' are found to be predictors of work performance of executives. But out of 13 factors, the most important factor for Insurance Sector employees is: 'Optimism'. In a research it was found that insurance salespeople who were optimist sold 37% more insurance policies in their first two years in comparison to the pessimists (Seligman, 1990). The explanation to this lies in the fact that in insurance sector frustration level is high and executives become demotivated. In such environment only optimistic executives can survive.

(iii) Further the impact of demographic and socio-economic variables have been studied on the emotional intelligence score. The factors which affect emotional intelligence are:

a. Gender: Males and females do not differ in much of the factors of emotional intelligence but in some traits they differ. The answer lies in the psychological set up of different genders. Males are scoring high on some parameters of emotional intelligence as stress tolerance, happiness, optimism etc. and females are scoring high in Relationship Building. Females are thought to be more social than males. The results of previous researches (Adeyemo, 2008; Punia, 2005; Mayer and Geher, 1996; Stein and Book, 2006) also claim that male and female differ in certain aspects of emotional intelligence.

b. Age: With age the EQ of an individual increases. This is also in concurrence with the study conducted by Multi Health Systems (2005). The results hold that EQ raises steadily from teens to your 40's and once you are past 50 it tapers off a bit. Another study by Abraham (2004) also expressed the view that emotional intelligence tend to increase as one matures. As one grows old, ability to handle situation, maturity level, stress tolerance and understanding of others increases and so Emotional Intelligence increases.

c. Marital Status: In Indian context, marital status is affecting the overall EQ score. Married people are showing higher EQ in comparison to the unmarried ones. There is little evidence in literature in support of this result. The only study which I found, is in contradiction with my result, i.e. unmarried people are more emotionally intelligent than the married ones (Punia, 2005). The probable explanation for the result of this research could be attributed to the fact that after marriage person's life is changed. As they start taking responsibility their way of dealing with others changes, they become more patient and mature.

(iv) The factors which do not affect emotional intelligence are: Qualification and Income. Emotional intelligence does not depend upon the qualification of an individual. An illiterate could handle the situation in better manner and could have better interpersonal relationships. Similarly income also does not affect emotional intelligence of a person.

Conclusion

Emotional intelligence is a predictor of work performance and hence success or failure of an individual in his / her professional life. So the individuals and organizations must focus on this aspect in order to enhance their efficiency. Training programs can help an individual to enhance their emotional intelligence. So the organizations now a day are focusing on organizing such training programs. Even some organizations have started using this concept in selection of the employees for various job positions. By these steps organizations would be able to create a competitive edge in a dynamic environment.

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A Study on Customer Relationship Management in Consumer Markets: Grandiosity or Reality?

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Relationship marketing (RM) was conceived as an approach to industrial and service markets and considered to be inappropriate in other marketing contexts. Recently, however, the domain of RM has been extended to incorporate innovative applications in mass consumer markets. Much has changed in a recent years. Recent applications of RM in consumer markets have been facilitated by developments in direct and database marketing within an increasingly competitive and fragmented marketplace. This paper presents a critical review of the history of RM in consumer markets, and incorporates important conceptual, practical, empirical and popular contributions. A number of critical issues which remain unresolved are identified in the paper. These form the basis of ten research propositions which are crucial to justifying and advancing the domain extension into consumer markets.

Keywords: *Relationship Marketing, Consumer Marketing, Consumer Behavior, Customer Relationship Management*

Introduction

Relationship marketing (RM) was initially conceived as an approach to marketing in inter-organizational and service situations on the basis that, contextually and structurally, these sectors required an alternative paradigm to that which was dominant in mass consumer goods markets (Berry, 1983; HaÊkansson, 1982). A decade ago, thoughts of appropriating the relational perspective and transferring it into mass consumer markets would have been unthinkable, yet today RM is embraced by both practitioners and academics in a wide range of markets and contexts. As such, applications in consumer markets represent a significant and somewhat surprising domain extension.

RM is now considered to be a feasible strategy in mass consumer markets (Christy et al., 1996; GroÈnroos, 1996; Sheth and Parvatiyar, 1995a). Discussions of business to consumer relationships (BCRs) have been broadly influenced by the emerging literature on relationship marketing, and by developments in direct and database marketing. In terms of the former, literature from industrial and service marketing contexts provides the conceptual underpinning for BCRs. This literature outlines how customer information might be acquired, analysed and utilised in developing BCRs. The marriage of these two very distinct literatures (as evident in the work of Dwyer et al., 1987) has provided the impetus for relationship building in consumer markets. For example, there are criticisms that it has become a ``popularized buzzword'' (Coviello et al., 1997), which has been written about ``to the point of saturation'' (Petrof, 1997). As an emerging approach to business, RM has reached a critical juncture with some authors questioning the extent to which robust theories have emerged (Gummesson, 1987) and suggesting that the discipline is experiencing an ``identity crisis'' (Sheth, 1998). Such prognoses reflect continuing concerns relating to the delineation of an appropriate domain. Indeed, a number of authors have recently begun to challenge assumptions that BCRs exist (Hibbard and Iacobucci, 1998; MoÈller and Halinen, 1998). In this paper, i review the history of RM in consumer markets, and discuss a number of conceptual and practical problems inherent within this domain extension. A discussion of the historical and conceptual development of RM in areas other than consumer markets is beyond the remit of this paper. However, interested readers are directed to a number of alternative sources (cf Berry and Parasuraman, 1991; Buttle, 1996; Christopher et al., 1991; Christopher and Peck, 1998; de BuÁrca, 1995; Halinen, 1997; MoÈller and Wilson, 1995; Morgan and Hunt, 1994).

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From Obscurity to Popularity

As with all things, the emergence of a new paradigm or perspective (in business) has a history, and its popularity, is a function of the work of a number of key protagonists, and important changes in the environment which make their work both accessible and apposite. Understanding of this history is fundamental in considering the popularity RM currently enjoys in consumer markets. The literature in this area can be broadly categorized into that which is involved with: conceptual developments, including philosophy, concepts and domain (Sheth and Parvatiyar, 1995b; Christy et al., 1996); operational issues, implementing relationship strategy (Blattberg and Deighton, 1991, Child et al., 1995; Copulsky and Wolf, 1990; GroÈnroos, 1996; Stone et al., 1996); popular literature, outlining its relevance in the new millennium (McKenna, 1991; Pine et al., 1995; Vavra, 1992); and empirical studies, identifying the nature of consumer-organizational relationships (cf. Barnes, 1997; Iacobucci and Ostrom, 1996). Although it is difficult to identify a clear chronological path reflecting the growth in popularity of the concept of BCRs, a number of relatively distinctive stages can be retrospectively identified. These are conceptualized as: obscurity; discovery; acceptance; and popularity.

Obscurity

RM was not waiting in the wings hoping to be discovered by mass marketers. It emerged as an alternative to mainstream marketing and was popular among interorganisational and service marketers (Aijo, 1996, Anderson and Narus, 1984; Berry, 1983; Frazier, 1983; GroÈnroos, 1981; Gummesson et al., 1997; HaÊkansson, 1982). Throughout the 1980s, RM was largely ignored by consumer marketers as the domain was considered to be both conceptually and contextually different. Although, there were some suggestions that the emphasis on customer acquisition was misguided (Rosenberg and Czepiel, 1984), marketers remained committed to "transaction marketing"' strategies. Discovery Dwyer et al., (1987) proposed that consumer marketers could also benefit from "attention to conditions that foster relational bonds leading to reliable repeat business"'. Although it was suggested that these conditions could be created using the tools and techniques of direct and database marketing (Dwyer et al., 1987; Goldberg, 1988), the necessary technology was not widely available at this time. However, by the early 1990s the cost of computing hardware had fallen dramatically resulting in a massive increase in the use of direct and database marketing (Evans et al., 1996; Fletcher et al., 1991; Petrison et al., 1993). The database could be used to: maintain records on each customer (Blattberg and Deighton, 1991; Dwyer et al., 1987; McKenna, 1991; Petrison and Wang, 1993; Shani and Chalasani, 1992); personalise interaction with customers (Blattberg and Deighton, 1991; Treacy and Wieserma, 1993); and identify the most important customers, calculate their lifetime value and create opportunities for up-selling and cross-selling (Blattberg and Deighton, 1991; Reichheld and Sasser, 1990). Thus, the database was believed to perform a key learning role for organizations. Despite the apparent practitioner euphoria, many within the academic constituency remained skeptical. Practitioners had begun to recognize the limitations of overemphasizing customer acquisition (Reichheld and Sasser, 1990) within an intensely competitive and fragmented marketplace (Meuller-Heuman, 1992; Shani and Chalasani, 1992). Therefore, the very characteristics which made relationship building difficult in consumer markets made relationship building attractive to organizations, as a basis for developing competitive advantage.

Acceptance

1995 marked a turning point for RM in consumer markets and this can primarily be viewed as a function of the academic weight brought to bear on the argument. Sheth and Parvatiyar (1995b) justified academic interest in BCRs, arguing that the paradigm shift from transactions to relationships was related to a move to more direct interaction, both in business to business relationships (BBR) and BCR contexts They also proposed: that it was possible to apply RM to consumer markets; that consumer and organizations both wanted relationships; and that customer participation in loyalty programmes was evidence of this (Sheth and Parvatiyar, 1995a). By drawing on the literature in psychology and sociology, Sheth and Parvatiyar (1995a) created a legitimate link between the extant consumer behaviour literature, the emerging RM literature and the operational literature associated with direct and database marketing, thereby laying the conceptual groundwork for BCRs.

Popularity

"With few exceptions, marketing specialists and, in particular, academicians accepted relationship marketing as the latest gospel and began spreading it faithfully as loyal disciples" (Petrof, 1997). Post 1995 there was an explosion of work which attempted to identify: the motivation of consumers and organizations to engage in BCRs; the situations where relationship building was feasible; the process of relationship development; and the nature of BCRs (cf. Bennett, 1996; Bhattacharya et al., 1995; Buttle, 1996; Christy et al., 1996; Coviello et al., 1997; GroÈnroos, 1996; Gruen, 1995; Palmer, 1995; Pine et al., 1995). However, a number of authors have continued to instill a cautionary note, and have questioned the conceptual and empirical basis of RM in consumer markets (cf Barnes, 1997; Gruen, 1995; Iacobucci and Ostrom, 1996; Hibbard and Iacobucci, 1998; O'Malley et al., 1998). Collectively, these works are noteworthy because they reflect and discuss a number of significant tensions which remain in accepting this domain extension. That is, there are suggestions that a number of critical issues remain unresolved within the literature, and these critical issues undermine the utility of RM in consumer markets.

Critical Issues

One critical problem which has inhibited understanding relates to the precise identification of a RM strategy in consumer markets. Although a number of authors have variously contrasted relationship marketing with direct, database, loyalty, retention and transaction marketing, such discussions generally fail to clarify substantive issues. For example: RM is concerned with relationship endurance while direct marketing is concerned with achieving immediate sales (Copulsky and Wolf, 1990); RM has a wider repertoire of techniques at its disposal than has direct marketing (Stone et al., 1996); RM is a "bottom up" approach while database marketing is a "top down" approach to strategy (Shani and Chalasani, 1992); RM refers to finding products for customers as opposed to the emphasis on finding customers for products in transaction marketing (Pine et al., 1995); and RM is distinct from loyalty marketing because learning is a key objective (Christy et al., 1996). For the most part, these distinctions are tactical and fail to address substantive philosophical, conceptual and strategic issues.

More recent attempts to clarify terminology tend to incorporate such operational approaches within the rubric of RM (cf. Coviello et al., 1997; Rowe and Barnes, 1998). Rowe and Barnes (1998) identify what they consider to be four tangible manifestations of RM in consumer markets:

(i) Locking customers (cf. Barnes, 1994; Turnbull and Wilson, 1989; Palmer, 1995);

(ii) Customer retention (cf. Berry, 1983);

(iii) Database marketing (Copulsky and Wolf, 1990; Treacy and Wiersema, 1993); and

(iv) Close personal relationships (cf. Barnes, 1994; 1995).

However, the first three approaches are criticized in that all are lacking recognition of "mutuality and special status" (Rowe and Barnes, 1998) and, therefore, are unlikely to result in close, personal, long-term relationships. Coviello et al., (1997) propose that database marketing is actually a form of RM which relies upon information and technology based tools. Their classification scheme broadly distinguishes between "transactional marketing" and "relational marketing" with the latter further subdivided into: database marketing; interaction marketing; and network marketing. Thus, rather than clarifying terminology issues, many of these authors have contributed to the conceptual quagmire already in evidence. As a result, we argue that this lack of clarity hinders the identification of appropriate empirical contexts for research. This may be a major contributor to the lack of agreement over what actually constitutes a BCR and what the antecedents and outcomes of such a relationship might be. This leads us to suggest:

P1: Relationship marketing is conceptually distinct from transaction marketing, direct marketing, database marketing, loyalty marketing and retention marketing on the basis that these are tactical, while RM focuses on long-term interaction leading to emotional or social bonds.

There is a need to explore the conceptual distinction between these various forms of marketing in order to identify appropriate empirical contexts for research. Furthermore, for such research to be comparable, conceptual definitions must be widely agreed. In addition to the operational strategies employed by marketers, the propensity to develop BCRs is also dependent on the "relationship friendliness" of the product-market and the willingness of customers to participate (Christy et al., 1996; Sheth and Parvatiyar, 1995a). Relationships are presumed to develop as a result of regular contact, preferably hands-on or face-to-face (Rowe and Barnes, 1998), and are unlikely to emerge in situations where products/services are generic, and where price or accessibility are major issues (Palmer, 1995). As such, it might be expected that only a few ``relationship friendly" product-markets actually exist. Consumers are assumed to engage in exchange relationships in situations where: involvement in the product category is high; there is uncertainty associated with the purchase; when the product can be customized; when consumers have the inclination and ability to pay for more than just the basic commodity; and when there are qualifying conditions (minimum spend; need for training) which they meet (Christy et al., 1996). In order to inform discussions of the kind of Product/market situations in which a RM strategy might be feasible, greater understanding of conditions necessary for the development of BCRs is needed. It is important to recognize that it is not possible to create BCRs in all consumer exchange contexts. Thus:

P2: The opportunity to develop BCRs is only feasible for high involvement products, characterized by inelastic demand, where regular interaction with consumers occurs.

Indeed, the development of BCRs is also predicated on the voluntary participation of both marketers and consumers (Christy et al., 1996; Gruen, 1995). As such, understanding both marketer and consumer motivation for participation becomes particularly important. Marketers are motivated by "enlightened self-interest" (Sheth and Parvatiyar, 1995a) because RM is assumed to increase efficiency and effectiveness by: reducing marketing costs, particularly those relating to mass communications; facilitating targeting of high-profit customers; enhancing customer loyalty; reducing price sensitivity among relationship customers; creating opportunities for up-selling and cross-selling; erecting exit barriers; and facilitating database development (Beaton and Beaton, 1995; Christy et al., 1996; Copulsky and Wolf, 1990; Dwyer et al, 1987; GroÈnroos, 1996; Gundlach et al., 1995; Palmer, 1995; Pine et al., 1995; Sheth and Parvatiyar, 1995a; Reichheld and Sasser, 1990). However, Gruen (1995) reminds us that while customer relationships may be cumulatively important to the seller ``the stakes are relatively small and inconsequential" for individual BCRs. As such, an individual BCR will be unlikely to represent a significant investment to the seller. Thus:

P3: Not all individual BCRs are sufficiently important to merit individual treatment by marketers.

This is important because there has been a tendency among researchers and practitioners to treat all customers as though they are relational. This is clearly simplistic. Researchers have also been interested in understanding why consumers might be willing to engage in BCRs. Gruen (1995) draws attention to a number of factors which suggest that individual relationships may not be very important from the consumer's perspective. In particular, the economic consequences of any relationship to a consumer are far less serious than BBRs because there are sufficient ``readily available alternatives that can be substituted for minimal financial cost" (Gruen, 1995). That is, switching costs are much less of an issue because structural and technical bonds are less prevalent. However, Sheth and Parvatiyar (1995a) argue that consumers are motivated to engage in BCRs in order to reduce both choice and risk. Conceptually, this is in line with the writing of Pine et al., (1995) but has been strongly questioned by both Peterson (1995) and Bagozzi (1995). Indeed, Peterson argues that the customer satisfaction literature suggests that consumers prefer more, not less choice, while Bagozzi (1995) views choice reduction as a (possibly unintended) consequence of marketing relationships. Thus:

P4: Reduction of choice is insufficient motivation for consumer participation in BCRs.

While Sheth and Parvatiyar (1995a) seductive conceptualization of consumer motivation in terms of choice reduction may have face validity, it has detracted research attention from more substantive issues. Consumers are assumed to engage in BCRs because they will benefit in some way, either through the attainment of their goals or through achieving greater value (Bagozzi, 1995; Christy et al., 1996; Peterson 1995; Sheth and Parvatiyar, 1995b; Tzokas and Saren, 1997). For the most part, these "rewards" relate to "frequent user" or "loyalty programmes", on the basis that these are tangible manifestations of a relationship strategy (cf. Christy et al., 1996; Palmer and Bejou, 1994; Sheth and Parvatiyar, 1995a). The outcomes of exchange relationships are primarily conceptualized in terms of increased loyalty, perceived as discernible through repeat purchasing behavior.

Loyalty schemes have the dual objectives of rewarding loyalty and keeping competitors out of the market (Rowe and Barnes, 1998) However, loyalty schemes tend to emphasise repeat purchasing and have been criticised as sophisticated sales promotions (Dowling and Uncles, 1997; O'Brien and Jones, 1995; O'Malley 1998). Loyalty programmes are highly questionable as relationship building strategies as they do not encourage "affection, fidelity or commitment". According to Dick and Basu (1994) when behavior is not accompanied by a favourable attitude the most that can be hoped for is "spurious loyalty" which is short-lived and the customer remains open to better offers. Rowe and Barnes (1998) conceptualize this manifestation of RM as "locking in the customer" and, indeed, it does reflect a deliberate choice reduction strategy. Loyalty schemes are not considered suitable as a mechanism for generating sustainable competitive advantage (O'Malley, 1998; Rowe and Barnes, 1998). Thus:

P5: Loyalty programmes are best considered within the rubric of sales promotion rather than that of RM given their emphasis on tangible rewards.

In resolving this problem, much of the rhetoric evident within the practitioner literature is eliminated, thereby allowing researchers to concentrate their efforts on more substantive RM issues. Additionally, it facilitates the evaluation of loyalty schemes within a more appropriate framework (i e. sales promotion).

Within the context of relationships, value is generally perceived in terms of the rewards that accrue from relationship participation. These are believed to comprise both tangible and intangible rewards, with the former relating to discounts and club membership (Sheth and Parvatiyar, 1995a; Christy et al., 1996), and the reduction and potential elimination of transaction costs (Buttle, 1996; Dwyer et al., 1987). In contrast, intangible "rewards" include the risk-reducing and social benefits of relationship participation (Bagozzi, 1995, Christy et al., 1996; Dwyer et al., 1987; Sheth and Parvatiyar, 1995a). Although intangible or emotive rewards are identified as central to marketing relationships, these have received little attention in the literature. Indeed, the terms "loyalty" and "retention" may be obscuring understanding of BCRs, and alternative terms already evident in the literature including "special status" (Czepiel, 1990) and "emotion" (Bagozzi, 1995) should be employed (Barnes, 1997). Thus:

P6: Tangible manifestations of loyalty are not indicative of the existence of a BCR unless accompanied by emotion or some other affective dimension.

The focus on tangible rewards may be a result of conceptualizing loyalty programmes as RM, and has led to intangible and affective dimensions being overlooked. The implicit goal of RM is "to move exchanges away from the discrete transactions pole and toward the relational exchange pole, with the underlying assumption that relational exchange is preferable in increasing amounts" (Gruen, 1995). Discrete transactions are largely governed by market forces and are of specific content and duration In contrast, relational exchange refers to interactive relationships between parties that are characterized by economic, social, legal, technical, informational and procedural bonds. Relational exchange exists when the parties expect that the relationship will endure over time, when benefits and burdens are shared, when trust is evident, and when planning for future transactions takes place (Dwyer et al., 1987; Frazier et al., 1988). Although this difference between transactions and relationships is accepted in the literature, in consumer markets the distinction is not apparent. For example, Dwyer et al. (1987) themselves acknowledge that "....the notion of instantaneous exchange between anonymous partners who will never interact in the future is an abstracted model which does not exist in the real world". Furthermore, the "ideal" or relational end of the continuum is actually very rare in BCR situations, because consumers are not deeply involved in every exchange situation and there are very few opportunities for negotiation given standardized product offerings and administered pricing. As such, concepts of relational exchange "....seem characteristic of only a portion of consumer transactions, namely those involving high priced durable goods and complex services" (Dwyer et al., 1987), implying that the majority of exchange in consumer markets is transactional. Conceptualization of exchange in consumer markets, as either transactional or relational, is inadequate, in that it fails to recognize the wide range of possible positions on the continuum. Thus:

P7: Exchange in consumer markets is likely to be characterized by both transactional and relational elements.

Recognition of exchange as incorporating both relational and transactional elements allows a merging of the perspectives offered by each paradigm, thereby facilitating the development of more coherent and robust theories. Relationships develop through interaction (cf. Czepiel, 1990; Solomon et al., 1985). Specifically, interpersonal interaction facilitates the creation of social relationships and emotional bonds through enhancing trust, commitment, communication etc. (cf. HaÊkansson, 1982). Sheth and Parvatiyar (1995b) argue "when producers and consumers directly deal with each other, there is greater potential for emotional bonding that transcends economic exchange". Although the notion of interaction in BCRs was initially conceived as problematic, there have been suggestions that non-personal interaction with technology and systems can provide the same function (GroÈnroos, 1996). Indeed, Iacobucci and Ostrom (1996) refer to BCRs as "transactional relationships" which tend to be "casual and distant" where history and the existence of trust are of little importance, and where the relationship is generally short-term and far less intense than BBRs. Despite the limited interaction in BCRs, there has been a tendency to assume that relationships exist which is close, long term and exhibit high levels of trust, commitment, mutuality, satisfaction, and co-operation (Dwyer et al., 1987; Morgan and Hunt, 1994). There has been an inherent assumption that social exchange theory constructs continue to be useful in understanding BCRs (cf. Dwyer et al., 1987; Fournier, 1998; Morgan and Hunt, 1994). However, there is little agreement as to the utility of these constructs in describing the nature of BCRs. The relevance, role and importance of trust is unclear within the context of BCRs (cf. Berry and Parasuraman, 1991; Cowles, 1997; Dwyer et al., 1987; Gruen, 1995; Morgan and Hunt, 1994), while the commitment construct is difficult to distinguish from behavioral and affective conceptualizations of loyalty (cf. Dick and Basu, 1994). Indeed, given that BCRs are conceived as being distant, discrete, and impersonal, the perceived utility of social exchange theory is undermined (cf. Coviellio et al., 1997; Gruen, 1995; Iacobucci and Ostrom, 1996; Stone et al., 1996), a situation exacerbated by the difficulties of creating close emotional bonds via technology mediated interaction (cf. Barnes, 1994, 1995; Fournier et al., 1998, Hogg et al., 1993; Peterson and Lucas, 1996). Hibbard and Iacobucci (1998) conducted a metatheoretical analysis of over ten years of literature and concluded that there is no empirical evidence to suggest that BCRs exist. As such, BCRs have been treated as if they are real, and this has led to an emphasis on concepts from social exchange theory in describing and explaining commercial exchange relationships. Thus:

P8: Social exchange theory over-emphasizes the role of trust, commitment, communication and mutuality in exchange within consumer markets.

Social exchange theory ties us into the language and rhetoric of interpersonal relationships, particularly those of marriage. This offers only a partial and prescriptive view of exchange. However, BCRs are generally assumed to be managed by the seller (Blattberg and Deighton, 1991), and are conceived as being asymmetrical (Dwyer et al., 1987; Gruen, 1995; Iacobucci and Ostrom, 1996). Therefore, customers continue to be seen as passive participants in the process, with the resulting assumption that the relationship can be managed independently of customers' overt participation. This is also evident in conceptualizations of marketing as seduction (Deighton and Grayson, 1995) and the approach continues to be echoed in the managerial literature. Conceptualizing relationships as ``managed contexts" (Stone et al., 1996) shows no recognition of the concepts of ``mutuality" or ``special status" as called for in the literature (cf. Barnes 1997; Rowe and Barnes, 1998). In conceiving the marketer as ``manager", and the customer as being managed, it is obvious that the customer continues to be viewed as a passive, rather than an active participant, in the relationship. Furthermore, the asymmetrical nature of the relationship renders the marriage analogy largely inappropriate given its implicit emphasis on equality and partnership. Thus:

P9: The use of the marriage metaphor in exploring BCRs distorts and inhibits conceptualization.

The normative values associated with the marriage metaphor limit understanding of BCRs. Therefore, the full range of metaphors which cover relationships between the sexes, including stalking, rape, polygamy and prostitution, could be more usefully employed (Tynan, 1997). Indeed, questions have also been raised about the utility of direct marketing approaches in relationship building (cf. Barnes, 1994, 1995; Fournier et al., 1998; Hogg et al., 1993; O'Malley et al., 1998; Rowe and Barnes, 1998). The employment of direct and database marketing in operationalising RM may actually undermine the process of relationship development, because what marketers call "intimacy" (Treacy and Wieserma, 1993) many consumers view as "intrusive" (O'Malley et al., 1997). The problem is that "far too many firms have focused their energies on database building rather than relationship building" and have, therefore, ignored the need for customers' voluntary participation in the process.

Despite suggestions that RM is far less manipulative than the mix management paradigm (Sheth and Parvatiyar, 1995a), approaches to implementation are more closely associated with the goals of direct marketing rather than the philosophy of RM. Whether RM is an alternative to the mix paradigm or whether both paradigms are complimentary (Gummesson, 1994) is an important, yet unresolved, issue. Thus:

P10: The mix management paradigm is philosophically and operationally incompatible with RM.

Problems with operationalising RM in consumer markets are a direct result of Relationship attempts to combine the perspectives offered by both paradigms. Elements of each paradigm have been selectively adopted without consideration of their compatibility. In particular, there has been no empirical evidence to suggest that direct marketing is a sufficient substitute for interpersonal interaction.

Conclusion

Although RM possesses much intuitive appeal, the basic assumptions that underpin this domain extension have not been tested or challenged in any meaningful way. Despite more than ten years of academic and practitioner interest in this area, understanding of the nature of BCRs has advanced little (Barnes, 1997; Bejou, 1997; Petrof, 1997). Practitioner interest has been the driving force behind its growth in popularity. Given the diversity in operational approaches employed, and the lack of accepted definitions, it has become impossible to delimit the domain. The boundaries are completely permeable and elastic. This has resulted in difficulties in identifying appropriate contexts for empirical research, and has exacerbated conceptual problems within the emerging discipline. The assumption that BCRs are similar to BBRs must also be challenged. The domains are conceptually and structurally distinctive (cf. Gruen, 1995). Exchange in consumer markets is likely to be characterized by both transactional and relational elements. Furthermore, it is neither possible nor profitable to create close, personal and long-term relationships with all consumers in all product-markets.

Social exchange theory may still have a role to play in situations where relationships are recognized by both marketers and consumers, where product involvement is high, demand is inelastic and interaction frequent. Alternatively, perspectives offered within the extant consumer behavior literature including cognitive (Engel et al., 1995), behaviorist (cf. Foxall and Goldsmith, 1994) and experiential (cf. Holbrook and Hirschman, 1982; Brown and Turley, 1997) could be considered. This would explicitly build on the conceptual links created and the propositions outlined by Sheth and Parvatiyar (1995a).

In conclusion, we suggest that the academy has extended the domain of RM into consumer markets despite a dearth of conceptual and empirical justification, a situation exacerbated by practitioner appropriation of relational language. Marketers have been too uncritical in accepting this domain extension and although BCRs present a number of interesting challenges (Gruen, 1995), many fundamental issues have not been addressed. Although marketers may have appropriated the terminology of relationships, it remains unclear whether or not they have internalized the philosophy. Indeed, in many markets all that are apparent is a resource shift from above to below the line, indicating that RM in consumer markets is more rhetoric than reality.

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Values and their Influence on Attitudinal Segments Identified amongst Automobile Users

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Marketing practitioners have long believed that personal Values impact consumer behaviour and attitudes. What is more interesting is the fact that consumer's personal values determine the attitudes they develop towards a product. The aim of this paper is thus to identify product-specific Values that impact attitudes in users of automobiles. This research identified the existence of three attitudinal segments amongst users of automobiles. Further, a discriminant analysis carried out using these three groups as dependent variable and product-specific Values as independent variable revealed the contribution of two different sets of product specific Values to be responsible for the difference in attitudes exhibited by users. The attitudinal segments have been identified using the Consumer Innovativeness and Consumer Involvement scale and the product - specific Values have been identified using the Means and End Theory of Gutman.

Keywords: *Personal Values, Attitude, Automobile Users*

Introduction

Personal values sought in a product purchase can be called as those deep seated representation of what is held important by an individual. According to Kahle (1983), personal values have a strong influence over several human behavior dimensions, including consumption. Pitts, Robert Jr. and Arch (1986) define Values as an abstract and complex construct that can provide underlying continuity to behaviour. Others like (Schopphoven, 1991) understand value as an instrument of social adaptation and believe that the systems of personal values provide an important means to identify what individuals believe to be important in their lives.

The initial interest in the area of Value research began with Rockeach (1973) suggesting on the role of Values in defining consumer behaviour and identifying the two types of Values instrumental Values and terminal Values and developing a scale called Rockeach Value survey, which till date is one of the popular scales to understand value dimension of the population. Many more such scales have been suggested by other researchers like Value and Lifestyle (Mitchell, 1983) and List of Values (Kahle, 1986). Zeithaml (1988) in her pioneering work on consumers of orange juice had suggested that Values can explain consumer choice and different consumers seek different Values from a single product category. Also of importance is to note that different consumers and different product categories and different consumption situations give rise to heterogeneity in perception of Value, other background variables like age and income also influence the perception of Values (Bolton and Drew, 1991).

Thus it is apparent that an individual's preference for some Values manifests itself as his requirement of some attributes or features in a product through which the consumer seeks to satisfy his objective or End Value that he seeks in a product. This is the fundamental basis for the Means and End Theory proposed by Gutman (1982). To conclude we may say that an individual in a typical consumption situation develops a set of Values that are very product specific and individual specific. Also the relative importance of different product specific Values that an individual develops for a particular product may vary from one person to another. Bahn and Granzin (1985) further suggest that both Values and demographics represent the foundation element of human behaviour process that interact with each other but yet remain the basic influence on behavior and manifest as lifestyle and attitudinal concerns.

Both the concepts of innovation and involvement can broadly be called as consumer attitudes. Innovation is considered as a predisposition to buy new and different products rather than stay with previous choices and

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consumption pattern and Involvement is considered to have its origin in motivations that is aroused by a particular stimulus and this stimulus is believed to come from either the product or service or product category. Although the concept of Values and attitudes have been discussed in marketing literature separately the interdependence of these two constructs especially in an Indian context is yet to be explored fully . The main hypothesis of this research revolves around identifying the discriminating influence of product specific Values on different attitudinal segments identified amongst the automobile users.

Theoretical Framework and Hypothesis Development

Values

According to Milton Rockeach (1973), Value is an enduring belief that particular mode of conduct is superior to the other and Value is also considered an abstract concept and complex concept that can provide continuity to consumer behaviour. Others like (Vinson, Scott and Lamont, 1977) believe that value may prove to be one of the most important explanations and influences on consumer behaviour. Value and emotions are interwired in a consumption situation and the values expressed in a consumption situation are the result of emotion that accompany of the consumption experience, the consumer is the latent variable that links the emotion and values.

This research uses the Means and End theory (Gutman, 1982) to identify the personal values that are relevant to an individual in their purchase of automobiles. Means and End theory is normally used as an l frame work to establish the cognitive structures which may be called as the declarative knowledge that give rise to meaning to products message The psychological Means and End approach focuses on the linkage between attributes that exist in the products at the lower level (the "means"), the consequences provided by the attributes and the personal values (the "ends"). In this way consumers learn to choose from products with certain attributes to achieve their desired consequence. Means and End theory underlines why consequences are important namely, personal values.

The most common method to establish Means and End chains has been laddering. Laddering based on Means and End theory refers to an in depth one to one interviewing technique used to gain an understanding of how consumers translate the attributes of the product into meaningful associations with respect to self. This is achieved by a series of direct probes using questions such as why is that important to you, with the objective of finding connections between a range of attributes, consequences and End Values. The various Means and End structures emanating from product attributes jointly form the meaning structure. Value research has been studied is that it helps in developing suitable communication strategy and helps in segmentation and brand positioning etc which provide insights into how consumers reinforce their values through consumption. Jantrania (2002) in her study "Customer Value in Organizational Buying: A Means- End Approach", suggests using these End Values to develop a scale.

Customer Innovativeness

Innovariveness can be defined as a personality trait (innate Innovativeness) and is "the degree to which an individual is receptive to new ideas and makes innovation decisions independently of the communicated experience of others" (Midgley and Dowling, 1978; Hirschman, 1980). The earliest researchers adopted the time of adoption concept to measure Innovativeness (Rogers, 1962); however this came under severe criticism for both methodological and theoretical soundness from critiques like (Midgley and Dowling, 1978). They called Innovation as a hypothetical concept existing in the minds of the researcher postulated to explain observable phenomena, but existing in the mind of the investigator at a higher level of abstraction. On methodological front the time of adoption method could not be generalized and findings could not be compared across studies.

According to Midley and Dowling (1978) Innovativeness does not reflect buying behaviour only but also about tendency to learn and adopt innovations within specific domain of interest. What makes the research on Innovativeness interesting is that innovators have some specific characteristics. Highly innovative people tend to take some risk, show greater social participation, and have higher opinion leadership scores, be more knowledgeable about new products be more involved in the product category, have greater media exposure and be heavy users of product of the product category (Pastore 1999, Goldsmith and Hofacker (1991) in their seminal work on Innovativeness have developed a simple easily administered scale that could be adopted any domain of interest and used in surveys using the above stated consumer behaviour attitudes. They argue that first a multi item scale helps consumers to sum up their behaviour and attitude and second the multiple item scale ensures that the construct is assessed from a variety of perspectives increasing the overall reliability of the scale. We have used the items from this scale to further our purpose of studying the relationship between these items and product specific values.

Customer Involvement

Consumer Involvement is defined as a person's perceived relevance of the object based on inherent needs and Values (Zaichkowsky, 1985). The concept of Involvement originated from Split Half theory where the assumption is that left and right halves of the human brain processes the information differently (Mittal, 1987; Krugman, 1965) proposed that there are two levels of Involvement; low and high and associated it with split half theory. Later, Consumer Involvement was conceptualized on a continuum with low and high at the two extremes of the continuum (Zaickhowsky, 1985).

To measure the concept of Involvement two scales have been popularly used, the first, Zaichkowsky's (1985) Personal Involvement Inventory (PII), treated Involvement as a uni-dimensional construct (20 items are summed to produce a single score). The second Consumer Involvement Profile (CIP) was multifaceted. And given by Laurent and Kapferer's (1985). They argued that a Consumer's Involvement cannot be expressed in a single score because the type of Involvement is as important as its level. (1) the importance of the product class to the individual (i.e., the perceived importance of a good or activity to a particular individual, not its importance in an objective sense) (Havitz and Dimanche, 1990), (2) the pleasure or hedonic value derived from the product (i.e., Involvement in recreational activities is pleasurable for most individuals and many authors suggest that the consumption of recreation often results in fun, enjoyment, amusement, fantasy, arousal, and sensory stimulation) (Holbrook and Hirschman, 1982; Mannell, 1980; McIntyre, 1992);(3) the sign or symbolic value attributed to the product (i.e., people often purchase a good or leisure service because they want to belong or differentiate themselves from others and often is intended to generate favourable perceptions among other people) (Havitz and Dimanche, 1990); (4) the risk probability associated with a potential mis-purchase; and (5) the risk consequences associated with mispurchase. These risks include time and effort costs, monetary costs, physical danger, social risk (e.g., doing what is appropriate within a social/reference group), and performance risk (e.g., choosing an activity that fits skill level) (Brooker, 1984; Cheron and Ritchie, 1982)

Verbeke and Vackier (2004) in their study on Profile and effects of Consumer Involvement in fresh meat confirm that Involvement in meat is a multidimensional construct including four facets: pleasure value, symbolic value, risk importance and risk probability. Kyle, Kerstetter and Guadagnolo (2002) in their study on Market Segmentation using Participant Involvement have also found Involvement to be a multidimensional construct. This serves as a basis of our choosing the multidimensional construct of Laurent and Kapferer's (1985) for our research purpose.

Hypothesis

The present scope of this study does not include a study of all the variables like demographics and lifestyle in influencing consumer choice, however the relationship of great interest that Values influence attitudes is explored here. It is widely accepted that attitude impacts the predisposition of consumer to new product and as such more information on how these attitudes emerge in an individual would be interesting for any researcher.

Based on the theoretical framework that consumer attitude of Innovation and Involvement is individual and product specific. The first hypothesis for this study is:

H1: People differ in their degree of Innovativeness and Involvement and distinct segments can be identified on the basis of attitudes.

A study of literature reveals that researchers have identified certain specific personal values to be associated with a particular behavior. In his study Kahle and Kennedy have identified (1989) Sense of belongingness to be the most feminine value in the List of Values (LOV). Bearden, Netemeyer and Teel (1989) identified the need to connect with others to be associated with external personal values like warm relationship with others. Based on these researcher's findings we propose to verify the following hypothesis in our current.

H2: Product specific values differentiate the attitudinal segments identified in automobile users.

Researchers have identified Values as having the ability to distinguish between segments Bahn and Granzin (1985) have identified some specific values like religion influencing people to be health conscious and Gourmets seeking autonomy etc. Muller (1991) in his research has traced back the importance attached to tourist destinations to human Values. It will be attempt of this research to identify a set of product specific Values that best describes individual attitudinal segments, hence our third hypothesis:

H3: Different sets of product specific values describe the different attitudinal segments identified.

Research Methodology

The Research Instrument

There were three research instruments that were used in this research. The first one was the value scale developed using Means and End Theory as the theoretical base for consumer's purchase of small cars (Muralie and Mittel, 2010). Second a six item Consumer Innovativeness scale developed by Goldsmith and Hofacker (1991)was adopted suitably to study the consumer's Innovativeness in purchase of small cars and third a five item Consumer Involvement scale (CIP) developed by Lauret and Kapferer (1985) which was suitably adopted to study the consumers Involvement in purchase of small cars.

The product specific value questionnaire although it was used in the previous research done by the researchers, and the other Consumer Innovativeness scale adopted by us had to be tested for reliability. After checking the questionnaire for ease of understanding and clarity by getting the opinion of a few faculty members and students, the questionnaire was pre tested with a sample of 30 respondent's .the product specific value scale after removing one item had a cronbach alpha score of 0.76. The Consumer Innovativeness scale after removing one item had cronbach alpha scores of 0.70 which although a little low was acceptable because of the nature of analysis that we were planning to do with this construct. Some of the reasons for this low scores could have been lesser number of items in this scale and also partly indicative of multi dimensionality of the construct. The Consumer Involvement scale (CIP) is a multidimensional scale and cronbach for this was not calculated.

The final questionnaire contained a total of 24 items and respondents were asked to respond on an 7-point agree-disagree scale was used (1 stands for strongly disagree and 7 stands for strongly agree). The questionnaire containing the 24 items along with the underlying dimension they indicated is given in table 1.

Table 1: Different Items Measuring Values, Innovativeness and Involvement

Statements	**Dimension**
Product Specific Value Scale	
1.While buying a new car I would first like to check the cost of buying and maintaining the car	Economic Value
2.Comfort matters most in a car other things don't matter much	Comfort Value
3.The car I buy must be approved appreciated by my family members	Family Value
4. While buying a car reliability and performance of the car in the market is most important to me.	Security value
5. I would use my self gained knowledge while buying a particular car.	Self fulfillment Value

6. I will buy a car that is my choice in terms of design, features etc.	Freedom Value
7.I will buy a particular car because it reflects my personality	Self Respect Value
8. I will only buy a car that has a mass appeal and is appreciated by all.	Social Value
9. I will feel at peace with any car.	Inner Harmony Value
10. I will choose a car that's likely to give maximum fun and excitement.	Pleasure Value
11. I will not be ready to forego some minor safety aspects for other benefits in car.	Safety Value
12. I am concerned about emissions and will be much bothered about the environment friendliness of the car.	Environmental Value
13. I am conscious about fuel shortage and hence the criterion for selecting would be the fuel consumption.	Socio Economic Value
14. While buying I would certainly think about the congestion a car causes on the roads, the maneuverability, the parking space it requires etc.	Society Value
Consumer Innovativeness Scale	
15.If I had the resources I would like to own a new model of car as soon as it is launched	Social Participation
16. Compared to people from similar background I have changed cars more number of times.	Heavy User
17. In general I am the first one to know about a latest model of car launched	Media Exposure
18. I would want to be the first few owners of a new model of car.	Opinion Leadership
19. Generally I am the first one to know about the latest technology advancement/ models in automobiles much ahead of others.	Knowledge
Consumer Involvement Scale	
20.I am very particular about the car I drive , it is a very important decision	Personal Importance to product
21. Sometimes you do make mistakes while buying a car.	Risk probability
22.When you buy a car its hard to make a wrong choice	Risk Importance
23.I cant say that I particularly like the car I drive	Hedonism
24.You can really tell a person from the car that he or she drives	Sign Value

Sample

The unit of investigation for the study was individual consumer. Sample respondents were chosen from various occupational categories from the city of Delhi. No restriction was put on age, sex, educational qualification and income of individuals as the purpose was to get a representative sample of customers for our study. The questionnaires were circulated to students of management in about 7 colleges of Delhi and they were asked to get them filled by their parents, neighbours and relatives etc. This ensured a representative sample from the entire city. A total of 500 questionnaires were circulated and out of this220 filled questionnaires were returned, 215 questionnaires were found acceptable. The male to female distribution was 38 and 62 percent, respectively and the mean age of respondents was 38 years.

Table 2: Respondent Profile

Dimension	Segment	overall sample	percentage
Gender	Female	82	38
	Male	133	62
	Total	215	100
The mean age of respondents was 38 years			

Statistical Analysis

Analysis was carried out using SPSS 13.0 for Windows. Cronbach alphas were calculated for the two of the three scales that is the product specific value scale and Consumer Innovativeness scale, the third one which is the consumer Involvement scale is a multidimensional scale and cronbach alpha was not calculated for this.

Given the fact that the objective of this research was to identify attitudinal segments, cluster analysis helped us in identifying attitudinal segment amongst customers. To identify homogeneous consumer clusters with the same kinds of Innovation and Involvement, a non-hierarchical K-means cluster analysis was performed on the basis of the 10 variables that were used to understand the attitudes of customers.

The k-clustering approach is an exploratory approach, which examines the relationships between more than one variable and produces clusters based on these relationships. The benefit of employing a k-clustering approach is that clusters are formed based on actual relationships within the data set, and not prior assumptions by the researcher. A discriminant analysis carried out using these clusters identified as independent variables and the 10 dimensions measuring the attitudes further helped us in describing these segments better.

Subsequent to the identification of discrete consumer segments to prove the hypothesis of group of predictor Values being related to these segments. Univariate ANOVA and discriminant analysis were used to find a best set of product specific Values that may predict this segment. This last analysis provided a compact portrayal of the differences among the three attitudinal segments.

Findings

Attitudinal Segment

The result of Cluster analysis performed on the attitudinal variables is given in table 3. The table gives F-ratios and significance for the criterion variables and the variable means for each segment The statistics emerging from the analysis do indicate the relative contribution made by each variable to the composition of the market segments labeled A through C in the table. Based on their F-ratios, the seven variables making the greatest contribution to group formation are Personal Importance to product, Heavy User, Social Participation, Sign Value, Opinion Leadership, and Personal Importance to product, Media Exposure, Knowledge of Product and Hedonism. One variable measuring the risk associated with new purchase from the Innovativeness scale and two variable measuring. Risk probability and risk importance from Involvement scale are ignored from the point of view of describing the clusters as their F values are not significant.

Table 3: Univariate Anova and K Cluster Analysis

Attitudinal Variables	F	Sig.	Cluster Means		
			Group A	Group B	Group C
Social Participation	55.351	.000	2.79	5.54	4.16
Heavy User	55.529	.000	1.77	2.63	4.26
Media Exposure	23.882	.000	3.51	5.28	5.29

Opinion Leadership	46.179	.000	2.15	4.68	3.86
Knowledge	17.595	.000	3.34	4.91	4.00
Personal Importance to product	25.604	.000	5.64	6.24	4.67
Hedonism	14.106	.000	4.81	5.12	3.85
Sign Value	47.768	.000	3.23	5.50	3.67

Table 4: Number of Respondents in each Cluster

Cluster	A	53.000
	B	76.000
	C	86.000
Valid		215.000
Missing		.000

Table 4 gives the number of respondents in each cluster or segment, we must state here that because the variables used here are those that are used in clustering the final clusters will identify the segments based on the relative contributions made by these variables only, so any general inferences to a population are neither possible nor intended. The K means cluster analysis identified three groups of actionable clusters with comparatively large variations in their group means of different variables, as shown in Table 3 to indicate the presence of distinct segments in the sample under study. This proves our first hypothesis. We shall now give a brief discussion on these three groups identified.

Group A: This group stands highest on all the variables measured except one which is heavy user variable. This group stands out clearly on two predictor variables in the Involvement scale and three predictor variables in the Innovativeness scale. This indicates towards the presence of a distinct segment which is very innovative and involved in an automobile purchase, yet they may not be the owners of latest model of cars launched.

Group B: This group stands high on the innovativeness scale and also seems to be a segment that is a heavy user segment that is people who change cars more frequently as compared to others. However the startling contrast they provide compared to the Group A is that their level of involvement in product purchase are very low. This is indicative of segment that is highly innovative and could be the owners of latest model of cars yet they may not show keen involvement in product purchase that is they may not associate car purchase with one' own individuality.

Group C: The predictor variables in the Innovativeness scale are the lowest for this group, however the fact they are not innovative does not exclude them from being an involved purchaser. They are not a segment that believes in opinion leadership or social participation yet an automobile matters to them very much at a personal level.

As an inferential tool discriminant analysis is used to describe these clusters/ groups. As shown in Table 5 the two functions that are used to describe these clusters. The first one accounts for 56 % and second one 44% of the variance. Table 5 gives the canonical discriminant coefficients which is indicative of the relative contribution of the variables to the function. We observe in the first function that Social Participation, Sign Value attached to product, Opinion Leadership and Knowledge of Product to be making contribution largest contribution and the segment rate these dimension in the descending order A, B and C. The second function reflects a sizeable contribution from Heavy user, Media Exposure variable and Personal Importance variables in a negative sense , the segment rates these dimensions in the following order C, B and A.

Table 5: Eigen Values and Wilks Lambda

Function	Eigenvalue	% of Variance	Cumulative %	Canonical Correlation	Wilks' Lambda	Chi-square	df	Sig.
1	1.772(a)	55.8	55.8	.800	.150	392.746	22	.000
2	1.406(a)	44.2	100.0	.764	.416	181.720	10	.000

On the basis of result obtained both from cluster analysis and univariate ANOVA and discriminant analysis Segment B may be characterized as people who are extremely Involved and show a keenness to adopt and express their opinion about new launches, thus they are called as Daring and Involved segment. Segment C on the other indicates towards existence of a segment that is certainly a group that can be easily characterized as heavy user segment, aware of latest products but less interested in expressing their opinion and certainly do not show any degree of involvement with purchase of automobiles. This segment is called as the Innovative and Uninvolved segment. Segment A represents people who are an involved purchaser give lot of importance of the product to self and hence are an involved purchaser. This segment however, is extremely skeptical about new launches, showing very little interest in new cars that are launched and amongst the last to replace an automobile. Thus this group is called as the conservative and involved segment.

Product - Specific Values and Attitudinal Segments

Table 6 gives the result of discriminant analysis carried out to study the ability of product specific Values to describe these attitudinal segments. The question of whether all these predictor variables significantly distinguish the consumers in different attitudinal segments is obtained by taking each predictor variable as the dependent variable and the groups A to C as independent variable. The univariate ANOVA gives the F statistics along with level of significance. In our case the table 6 indicates that all the predictor variables except two is significantly differentiating the different attitudinal segments and the level of significance is less than 0.05%.Hence, we can definitely interpret that the predictors are significantly differentiating between the groups. This proves our second hypothesis.

Table 6: Univaraite Anova

Predictor Variables	F	Sig.
Economic Value	7.911	.000
Comfort Value	6.162	.003
Family Value	2.483	.018
Security value	2.846	.020
Self fulfilment Value	2.870	.022
Freedom Value	2.463	.017
Self Respect Value	7.748	.001
Social Value	1.057	.349
Inner Harmony Value	2.158	.030
Pleasure Value	7.498	.001
Safety Value	1.536	.207
Environmental Value	7.228	.001
Socio Economic Value	4.138	.012
Society Value	5.079	.007

Table 7 further gives the Wilks lambda, the Wilks lambda for both the functions are 0.538 and 0.646 and both are significant at less than 0.05%.thus indicating that both the functions have contributed equally in explaining variations between the three attitudinal segments. As shown by the eigen vlalues for both the functions in the table 7 the percentage of variance explained by the first function is 60.8% and the second function is 39.2%. Since both the functions have made somewhat equal contribution the group centroids as shown in table 8 are not far apart. Function at group centroids however does clearly indicate towards the fact that the function 1 discriminates group B from others and Function 2 discriminates group A from others.

Table 7: Eigenvalues and Wilks' Lambda

Function	Eigenvalue	% of Variance	Cumulative %	Canonical Correlation	Wilks' Lambda	Chi-square	df	Sig.
1	.308(a)	60.8	60.8	.485	.638	92.121	30	.000
2	.198(a)	39.2	100.0	.407	.835	37.085	14	.001

Table 8: Function at group centroids

Cluster Number of Case	Function	
	1	2
A	-.829	.420
B	.616	.337
C	-.033	-.541

Further table 9 also shows the Standardized canonical discriminant function coefficient, the value of the coefficient reflects the relative contribution of independent variable to the discriminant function. The predictor variables that contribute most to function 1 in the descending order are self respect value, pleasure value, self fulfillment value, freedom value. The predictor variables that contribute most to function 2 in descending order are comfort, Environmental Value, Socioeconomic value and economic value and society value.

Table 9: Canonical Discriminant Coefficients

Predictor Variables	Function	
	1	2
Economic Value	.487(*)	.023
Comfort Value	.457(*)	.180
Family Value	.272(*)	-.146
Security value	.239(*)	.169
Self fulfillment Value	-.231(*)	.141
Freedom Value	-.035	.540(*)
Self Respect Value	-.256	.492(*)
Social Value	-.126	.418(*)
Inner Harmony Value	.374	.400(*)
Pleasure Value	-.230	.399(*)
Safety Value	-.094	.323(*)

Environmental Value	-.156	.312(*)
Socio Economic Value	.015	-.223(*)
Society Value	.158	-.192(*)

The validity of discriminant analysis is determined by the percentage of cases it correctly identifies as belonging to their original groups as compared with the percentage of cases that would be expected by chance alone. The Classification result shown in table 10 contains a matrix of predicted vs. actual classification. The individual consumers are classified according to their discriminant scores. 150 out of 215 consumers were correctly classified as belonging to either Group A, B or C .The performance of this procedure is quite okay with a hit ratio of 70% which is way better than the chance criterion of 33%. Muller (1991) has also reported of a 69% success rate at classifying the segments using personal values.

Classification Results

Cluster Number of Case			Predicted Group Membership			Total
			1	2	3	
Original	Count	1	38	8	7	53
		2	13	54	9	76
		3	10			
	%	1	71.7	15.1	13.2	100.0
		2	17.1	71.0	11.9	100.0
		3	11.6	20.9	67.5	100.0

Discussion and Implications

From the discussion of the findings it is very clear that this study has identified the existence of three different attitudinal segments amongst users of automobiles. Two segments Group A and B can be clearly be identified by their differing level of Innovativeness, but they cannot be differentiated well by their level of involvement both emerging as involved purchaser. One segment i.e. Group C stands apart by their attitude of Innovativeness but show no real Involvement with product purchase Hence we have named the three segments as Conservative and Involved, Daring and Involved, Innovative and Uninvolved.

The other interesting information emerging from this analysis is that the presence of Innovativeness does not positively predict Involvement and not all involved purchasers are Innovative. Consumers may show their Innovativeness by frequently purchasing a product, yet they may not be very vocal supporters of their choice. The cluster analysis of Group A the segment that have been called Conservative and Involved reveals that although the product is significantly important to them and they relate it with their own personality yet they are never tempted to learn about latest launches , gather information or show any kind of Social participation in purchasing this product.

The discriminant analysis throws up some interesting information what is most apparent is that the function 1 largely distinguishes Group B from the rest and function 2 distinguishes Group A from the rest. The product specific Value that contribute largest to function 1 that describes this segment are Self Respect Value and Pleasure Value, Self fulfillment value, Freedom value. All these values have an emotive and psychological component in them. Thus it becomes apparent that any communication that is directed at this Daring and Involved segment, must arouse this segment's emotions and impact them psychologically.

Function 2 discriminates Group A distinctively the product specific Values that contribute greatest to this function are comfort Value, Environmental Value, Socioeconomic value and economic value and society value. All these values can be called as functional value which can directly linked to the product. The results indicate that this segment of Conservative and Involved consumers whose functional Values define and discriminate them would appreciate lot of product related communication. While the same cannot be said about the Innovative and Uninvolved segment, the function at group centroids (Table 8) clearly demonstrates that product specific Values that have largest contribution to function 2 impacts this segment negatively. Thus any kind of product related communication may rather be irrelevant to them. The answer to what exactly contributes to the attitude they carry must perhaps be found in some other factors which affect their behaviour.

This research has given some important insights into the different attitudinal segments of automobile consumers and also identified some important product specific values that help define them the best. The cluster analysis helped identify the three distinct attitudinal clusters, thus proving our first hypothesis. The Univaraiate ANOVA and F values proved the relative contribution of the product Specific Values in discriminating the three segments, thus proving the second hypothesis. The standardized canonical discriminant coefficients clearly demonstrated the ability of different set of product specific values to discriminate the different segments and thus prove our third hypothesis.

Conclusion

This research has empirically identified the existence of different attitudinal segments, the fact that within the innovative category there exist two types of customers one who dare to try new products others who may not be as enthusiastic yet be the mouth piece of new products is an interesting observation from this research. Also within this Innovative class one group which is not the mouth piece of new products is also hardly an involved purchaser. The fact that there exists a segment that may really not be Innovative was not unknown but certainly what was not expected was that this segment would still be an involved lot. The fact that Values dictate attitude has clearly been demonstrated in this research, which has identified different set of Values that help distinguish between two attitudinal groups. The identification of different set of values discriminating the different attitudinal segments should provide meaningful inputs to marketers to address these segments.

Limitations of the Research and Scope for Future Research

One serious limitation of this research is the fact that this research has been carried out in NCR region of Delhi, no real conclusion on the existence of such segments can be made for entire country with any amount of certainty. The other limitation arises from the fact that in this research the sample size was relatively small to make any conclusion on the degree of innovativeness or involvement of the segments.

Previous researchers have clearly demonstrated the role of demographic, lifestyles and values in impacting consumer attitudes. This research has only explored the role of Values, further research using the interaction of demographic and lifestyle variables can throw more light on the influence of these in shaping attitudes of automobile users. This research has established that few specific type of value is responsible for a particular attitude, to make any further generalization on a certain type of attitude more such research using different product and their users as the object of research must be carried out.

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Building Employer Brand Image through Early Recruitment Practices: A Study in Indian Context

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In an age of war for talent, cultivating employer brand can be a very effective strategy to attract and retain the talented employees in an organization This paper seeks to investigate the role that early recruitment practices play in building the employer brand image amongst students of business schools in India. Based on the analysis of data collected from 124 students from five different business schools located in different parts of the country, the study reveals that media presence/publicity is the only early recruitment practice that has an impact on the employer brand image Recruitment advertisements sponsorships and corporate-institute relation building are not significantly related to either the 'perceived job attributes' or 'attitudes' dimensions of employer brand image.

Keywords: *Employer Brand Image, Recruitment Practices*

Introduction

Brands are among a firm's most valuable assets. While brand as an idea can be sometimes difficult to grasp (Ind, 2004), it can be regarded as something that is owned by buyers and other stakeholders (Anholt, 2003). A brand can be defined as "a name, term, sign, symbol, or design, or combination of them which is intended to identify the goods and services of one seller or group of sellers and to differentiate them from those of competitors" (Kotler and Keller, 2007). Originally applied to differentiating tangible products, branding has now been extended to differentiate people, places and firms (Peter, 1999).

Specifically, the idea of branding relates to people management in organizations in two ways: first is the concept of internal branding, while the second relates to employer branding. Since employees are a key to the brand building process of a company, their behavior can reinforce or undermine a brand's advertised messages Brand positioning in the minds of consumers is a function of brand positioning in the minds of the company's employees (Berthon et al, 2005). Hence internal branding purports to align employees' values and behavior with a brand's desired values (Harris and de Chernatony, 2001). Employer branding, on the other hand, can is described as the efforts a company makes to communicate to existing and potential employees that the company is a desirable place to work (Lloyd, 2002). The term 'employer brand' first appears to be coined by Ambler and Barrow (1996) who defined it as 'the package of functional, economic and psychological benefits provided by employment, and identified with the employing company'.

Companies have been consciously attempting to strategically manage their employer brands since the last decade (eg. Infosys, Siemens, Coca-Cola, Starbucks). In an age of war for talent (Michaels et al., 2001) cultivating employer brand can be a very effective tool to secure and retain the much sought after employees. Yet, few companies are as rigorous or precise at branding themselves as employers as they are at branding their products and services (Hieronimus et al., 2005). Possible reasons could be that the factors that affect the success of employer branding efforts are not exactly clear, and also because of the fact that attempts to identify the strategic value addition of human resource practices in terms of profitability and shareholder value are in a nascent stage.

However, it is clear from practitioner literature that building a powerful employer brand can help the organization attract and retain the best talent, and that companies should invest in developing their employer brands (Muralidharan and Shenoy, 2006; Johnson, 2006). In addition, the Indian economy is again grappling with the problem of finding the right talent after the economy started picking up after the downturn. In fact, recruitment is a crucial human

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resource function irrespective of economic upturns and downturns as talent is always is demand. In this scenario, it becomes a timely issue to examine employer brand equity and associated recruitment practices which can influence the potential job seekers to apply for a position in an organization, thus increasing its chances of finding the right talent.

Campus hiring is a strategically important process, as university students are easily socialized into and organization's norms and culture and are more eager to learn (Loughlin and Barling, 2001; VanVianen, 2000). Recruiters need to understand how different organizational actions affect the students' choices during various phases of the recruitment process. According to Lievens and Highhouse (2003), recent research has confirmed the key role of potential applicants' initial impressions of organizations. Early impressions of an organization's image as an employer have been found to be related to initial attraction to organizations. Employer brand image has also been found to be related to students' intention to apply (Agrawal and Swaroop, 2009). It thus becomes important to examine what activities of an organization in the early stages of recruitment in campuses can help build the employer brand image in the minds of students. Hence, this paper intends to examine the role of early recruitment practices in building the employer brand image in campuses, specifically in B-school campuses of India.

This paper is organized as follows. First, theory and findings from previous literature to identify early recruitment strategies are drawn upon to develop hypotheses regarding how these strategies may affect employer brand image. These hypotheses are then tested on data collected from students of five premier business schools spread across the different parts of India. Many prominent recruiters flock to these business schools to attract its students. The findings are discussed next and implications of the study are also highlighted. The conclusions and limitations of the study are stated in the final section of the paper.

Theoretical Backdrop and Hypotheses Development

Brand equity can be defined as the marketing effects uniquely attributable to the brand – for example, when certain outcomes result from the marketing of a product or service because of its brand name that would not occur if the same product or service did not have that name (Keller, 1993). Brands are important to consumers because consumers may evaluate an identical product differently depending on how it is branded (Kotler and Keller, 2007). The ability of a brand to simplify decision making and reduce risk becomes even more valuable as consumers' lives get complicated and time is short (Jacoby et al., 1977). Brand names offer signals that consumers use to make inferences about the attributes of the product. Social identity theory supports the link between employer brand image and attraction as consumers identify themselves with the brand to improve their self-esteem. Resource based view suggests that strong brands can generate a competitive advantage for organizations because brands that are valuable and difficult to imitate allow a firm to move ahead of its competitors (Barney, 1991). Brands can initiate consumer purchase decision, improve the efficiency of marketing programs, and they allow firms to charge more for their products (Aaker, 1996; Keller, 1993; Cable and Turban, 2003).

Extending the concept of brand equity to the recruitment context, brand equity would signify the effect of brand knowledge on potential and existing employees of the firm (Backhaus and Tikoo, 2004). During recruitment, job seekers confront issues similar to those faced by consumers. As consumers do with products and services, job seekers form beliefs about potential employers; these beliefs can form the basis for decisions about whether to pursue or accept employment offers (Barber, 1998; Rynes, 1991).These beliefs can be useful to recruitment researchers who can gain valuable insights examining the structure and impact of these beliefs, termed as brand (Collins and Stevens, 2002).

Collins and Stevens (2002) have used the models of associative memory (Anderson, 1983) to understand the two key dimensions of employer brand image: the awareness of the brand/employer, and the associated feelings and knowledge of the brand/employer (Keller, 1993). In this study, the respondents evaluated only the firms they were aware of employers or potential employers, and hence this study focuses only on the associated feelings and knowledge aspect of the employer brand. Two aspects of this brand image are important: (a) General affective responses linked to a brand, termed as attitudes (Wilke,1986), and (b)

Beliefs about the brand's specific features that are relevant to the purchase decision, termed as perceived attributes. (Keller, 1993). Thus, employer brand image is defined as potential applicant's attitudes and perceived attributes about the job or organization.

Systematically influencing these aspects of employer brand image is crucial for recruiters. The applicants' beliefs can be affected by the experience and knowledge available at different stages of the recruitment process (Taylor and Bergmann, 1987). The first stage of recruitment occurs when a firm uses an array of different practices to attract talented individuals to apply to the organization (Barber, 1998). During this first stage, both low involvement and high involvement recruitment practices can be used to attract applicants to the company (Cable and Turban, 2001). Low involvement recruitment practices, such as general recruitment advertisements (e.g., banner ads on websites, recruitment posters) and sponsorship, provide general positive cues and signals regarding the company as an employer. On the other hand, high involvement recruitment practices require a greater degree of search and processing, give more details about the company and the job and affect individuals by creating positive affect toward the company and by signaling the presence of important attributes (Collins, 2007). These may include practices like detailed recruitment ads (e.g., recruitment brochures) and employee endorsements (e.g., company executives, university alumni).

Within the Indian context, Agrawal and Joseph (2010) initially identified the different practices related to the first phase of the recruitment process. A principal component analysis on the items related to these early recruitment practices yielded five factors that recruiters use to attract potential applicants towards the company. These include practices such as sponsorship, media presence/publicity, corporate-institute relation building, detailed recruitment ads and general recruitment ads. This study extends the research further to examine the effect of these recruitment practices on the employer brand image of the company.

Awareness of a product or brand can assist in recall and hence increase the attraction of the consumer towards the product or service. In a similar way, a high level of student awareness about an employer can enable the applicant to recall the name of the employer and associate any received information. According to Barber (1998), media publicity about firm may have spillover effects on their recruitment efforts. Collins and Stevens (2002) have found that publicity has been found to affect job seekers application intentions through their general attitudes toward the company (Collins and Stevens, 2002). Agrawal and Joseph (2010) have found that, within Indian business schools, media presence is the most important recruitment practice that affects the students' intentions to apply.

Along with publicity, sponsorship on the part of industry can help to create positive signals in the minds of potential applicants. Companies use sponsorships to influence job seekers as they foster positive affect among individuals who attend sponsored events or become aware of the sponsorship (Johar and Pham, 1999).

Advertising can also influence consumers' perceptions of a company and its products (Aaker, 1996). Redman and Mathews (1995) have found that recruitment advertising plays an important part in the hiring process by seeking to attract the best candidates. Along similar lines, one can expect advertising to positively impact the employer brand image.

In addition, academic institutions and industry organizations constantly interact with each other through academia-institute partnerships, consultancy projects undertaken by the faculty, guest lectures delivered by industry experts, etc. All these activities give a contemporary and practical exposure to the students to the real world of business as well as create an impression about the company in the minds of students. Thus one can expect these activities to create positive beliefs in the minds of students and attract them to apply for possible job offers (May, 1998). Discussions with the campus recruiters indicated that building industry – institute relations was an important strategy of companies to get access to the best talent available on campuses.

Based on the above discussions, the following hypotheses are formulated for the study:

Hypothesis 1. Early recruitment practices (sponsorships, media presence/publicity, corporate-institute relation building, detailed recruitment advertisements, general recruitment advertisements) will be positively related to the attitudes dimension of employer brand image.

Hypothesis 2. Early recruitment practices (sponsorships, media presence/publicity, corporate-institute relation building, detailed recruitment advertisements, general recruitment advertisements) will be positively related to the perceived job attributes dimension of employer brand image.

Methodology

Sample: This research is part of a larger study undertaken to understand the influences of campus recruitment activities and employer branding on application intentions in Indian business schools. The sample consists of students from five premier schools of India, randomly chosen (one each) from the northern, southern, eastern, western and central parts of India. Students from these business schools were approached through emails and were requested to respond to the survey through email. Only the students in the first year of their business education were selected as the target respondents as they would be applying for placements in the coming year. Initially, only 73 students had responded to the request. A second reminder was sent after a week. The final sample consisted of 130 students. Five of the returned responses were incomplete. One of the respondents had standardized score beyond ±4 on age, experience and five other items. All these six cases were not included in the final analysis. Thus the final sample consisted of 124 respondents.

About 85% (106) of these 124 respondents were males. 26.7% of the respondents had no prior work experience. Table 1 shows the mean age and work experience of the sample. While the study is not necessarily 100 percent representative of student population of the business schools in India, it nevertheless furnishes a data set on which reasonable conclusions about the influences of early recruitment practices on employer brand image can be made.

Table 1: Mean Age & Work Experience of Respondents

Gender	Age (yrs)	Work Experience (yrs)
Male (106)	24.02 (1.51)	1.51 (1.16)
Female (18)	23.06 (1.16)	0.96 (1.13)
Total (124)	23.88 (1.50)	1.43 (1 17)

Note: Figures in brackets are the standard deviations

Measures

The respondents were asked to think about a real world (not hypothetical) organization X, Y or Z as follows: X represented an organization which was likely to visit their campuses for placement purposes during the next placement season; if they could not recall such an organization, they had to think about an organization Y which had visited their campus during the last placement season; else, if they could not recall such an organization, they were simply asked to think about an organization which they would like to come to their campuses for placements in the coming year (organization 'Z'). It was not necessary for the respondents to name the organization. All the subsequent questions in the questionnaire had to be answered with respect to this organization. This approach helped to control for awareness of the brand/employer (Collins and Stevens, 2002) and is consistent with the models of associative memory (Anderson, 1983; Wyer and Scrull, 1989). In the final sample, 53.2% (66) had opted for 'X', 32.3% (40) for 'Y' and 14.5% (18) for 'Z'.

Independent Variables

Early recruitment practices. Agrawal and Joseph's (2010) scale, which was adapted and modified under Indian conditions from the original scales of Collins and Stevens (2002) and Collins and Han (2004), was used to measure early recruitment practices. It consists of 17 items designed to measure the early recruitment practices as given below. All the items were rated on a scale ranging from 1 (strongly disagree) to 5 (strongly agree).

Sponsorships: This consisted of four items related to company's sponsorship of campus events and scholarships. The αreliability of this scale was 0.789.

Media Presence/Publicity: It comprised of three items related to media coverage of the company of its officials. A sample item from this scale is 'Top officials from this organization (e.g., its CEO) are often quoted in newspaper and business magazines.' Cronbach α for this scale was 0.782

Corporate-Institute Relation Building: This consisted of 5 items related to institute-industry interaction. For example, an item on this scale was 'I have listened to executives from this organization who has visited our B-school as guest speakers.' The αreliability of this scale was 0.728.

Detailed Recruitment Ads: Two items constituted this scale. These items related to advertisements in magazines and newspapers. The αreliability of the scale was 0.876.

General Recruitment Ads: There were three items dealing with low involvement recruitment practices on this scale. The Cronbach α of this scale was 0.652.

Dependent Variables

Attitudes: Three items were used to the measure the attitudes dimension of employer brand image. One item was adapted from the scale used by Harris and Fink (1987). The other two items were generated using available literature and interviews with recruiters. The anchors for the items ranged from 1 (strongly disagree) to 5 (strongly agree). Reliability estimates yielded a Cronbach αscore of 0.848. This scale has been used earlier by Agrawal and Swaroop (2009) under Indian situations.

Perceived job attributes A number of job attributes that influence the applicant's decision-making process have been identified by Ng and Burke (2005), Harris and Fink (1987) and others such as Powell (1991). After an initial survey of available literature and conversation with recruiters, placement services officers and students, Agrawal and Swaroop (2009) identified sixteen items related to perceived job attributes. They subjected these sixteen items to a factor analysis to yield four factors related to compensation and location, responsibility and empowerment, learning and advancement and social and cultural factors. An identical set of items is used in the present study. All the items had to be rated on a scale of 1 to 5 as to how likely it was (1 = very unlikely; 5 = very likely) that the organization they had identified possessed the attribute in question. The alpha reliability of the scale was 0.640.

Control Variables

To control for the differences in demographic and organizational choice variables, five control variables were included during the analysis. Thus the control variables included are gender (male = 0, female = 1), age (in years) and work experience (yes = 1). Organization choice was accounted for through two dummy variables (X = 0, Y = 1, Z =0 and X = 0, Y = 0 and Z = 1).

Results and Discussions

The results of the analysis are shown in Tables 2 and 3. Table 2 shows the means, standard deviations, and correlations among the variables of interest. Some of the early recruitment practices showed significant correlations with the dimensions of employer brand image. Significant intercorrelations were also observed amongst the early recruitment practices themselves, with the absolute values ranging from 0.002 to 0.441.

Table 2: Means, SDs, Alphas & Intercorrelations of Study Variables (N = 124)

		Mean	S.D.	1	2	3	4	5	6	7	8	9	10
	Control Variables												
1	Gender#	0.15	0.354										
2	Age (yrs)	23.88	1.501	-.227(**)									

3	Work Experience##	0.73	0.444	-.218(**)	562(**)								
	Independent Variables												
4	Sponsorships	1.46	0.736	0.116	0.134	0 054							
5	Media Presence/ Publicity	3.60	0 952	0 140	0 048	-0.039	0.089	(0.782)					
6	Relations with Institute	3 46	0.978	165(*)	0.005	-0 076	0.111	.330(**)	(0.728)				
7	Detailed Recruitment Ads	2 44	1.134	0.022	0.113	-0.032	.334(**)	.350(**)	.233(**)	(0.876)			
8	General Recruitment Ads	2 98	0.897	0 030	0.001	-0 090	.179(*)	316(**)	253(**)	441(**)	(0 652)		
	Dependent Variables												
9	Perceived Job Attributes	4.17	0.451	0.227*	-0 018	-0 169	-0.169	0.340**	0.105	0	0.081	(0 640)	
10	Attitude	4 47	0.609	0.121	-0.142	-0 145	-0 110	.249(**)	0.085	-0 051	166(*)	.506(**)	(0.848)

** $p < 0.01$;

* $p < 0.05$ # 0 = Male; 1 = Female ## 0 = No; 1 = Yes

Alpha reliabilities are shown in parenthesis along the diagonal

Normality assumption was checked for before testing the hypotheses. Two of the variables were subjected to transformations to ensure that they satisfy tests of normality. Thus sponsorship was inverse transformed (x → 1/x) and perceived job attributes was subjected to reflection & logarithmic transformation (x → log (6-x).

Hierarchical regression analyses were used for testing the hypotheses 1 and 2. To account for the control variables, a dummy code was included for differences in the gender, measures for age and dummies for work experiences and organization choice in the regression equations.

Table 3 shows the results of the hierarchical regression analyses. Gender, age, work experience and dummy variables for organization thought about were entered as control variables in Model 1. In Model 2, the independent variables were also entered in the hierarchical regression. Perceived job attributes and attitudes are the two dimensions of employer brand image which were treated as dependent variables in the two regression equations.

Table 3: Results of Hierarchical Regression Predicting Dimensions of Employer Brand Image (N = 124)

Dependent Variable	**Perceived Job Attributes (log_ refl)**		**Attitudes**	
Control & Predictor Variables	**Model 1**	**Model 2**	**Model 1**	**Model 2**
	Beta	Beta	Beta	Beta

Gender	-.226	-.191	.085	.048
Age	-.052	-.048	-.059	-.058
Work Experience	.038	.021	-.097	-.082
Org Dummy 1	-.138	-.147	.034	.043
Org Dummy 2	-.110	-.140	.106	.145
inv_Sponsorships		-.114		.026
Media Presence/Publicity		-.356**		.254*
Corporate-Institute Relation Building		-.022		.048
Detailed Recruitment Ads		.050		-.193
General Recruitment Ads		-.028		.178
Word-of-Mouth Endorsements				
R^2	0.081	0.212	0.043	0.148
Adjusted R^2	0.042	0.142	0.003	0.073
□ R^2	0.081	0.130	0.043	0.105
□ F	2.091	3.739**	1.070	2.777*

*p<0.05; **p<0.01

As shown in the results of the second regression equations (Table 3, Model 2), the combined direct effect of the early recruitment practices explain a significant amount of variance for perceived job attributes (□R^2 = 0.130, $p<0.01$). They also explain a significant amount of variance for attitudes dimension of employer brand image (□R^2 = 0.105, $p<0.05$).

Hypotheses 1 and 2 predicted a positive relationship between various early recruitment practices and perceived job attributes and attitudes. As shown in Table 3 (Model 2), media presence/publicity was significantly related to perceived job attributes (□□0.356, $p<0.01$) and to attitude (□□0.254, $p<0.05$). However, other early recruitment practices (sponsorships, relation building, detailed recruitment ads and general recruitment ads) are not significantly related to either job attributes or attitude dimension of the brand image. Thus partial support is found for hypothesis 1 and hypothesis 2.

This study examines the effect of different early recruitment practices on the employer brand image of the students in premier business schools in the Indian context. Collins and Stevens (2002) study predicts that publicity, word-of–mouth endorsements (a somewhat similar set of items is termed as 'corporate institute relation building' as it more closely resemble the set of items used in the questionnaire) and advertising affect intentions to apply through the attitudes and attributes dimensions of employer brand equity. However, this study reveals that advertising (both general and detailed recruitment ads) does not affect employer image in the Indian context. Additionally, corporate relation building activities with the institute as well as sponsorship activities also do not affect the employer brand image. The only early recruitment practice variable that has a positive effect on employer brand image is 'media presence/publicity'. The results contradict the findings of Collins and Stevens (2002) based on a sample of 133 engineering students in the United States. This aspect of the results needs to be researched further for understanding the factors which could influence such contradictory results under Indian and American conditions.

The positive and significant effect that publicity has on both the attributes and attitude dimensions of employer brand image confirms the results flowing from earlier studies (Barber, 1998; Collins and Stevens, 2002). One can conclude that the perception of the students about the employment brand is built upon strong media presence. Indians are still influenced a lot by the opinions of family and friends, and it is possible that opting for an organization about which the students' family and friends are also aware of through the media are preferred by the students (Agrawal and Joseph, 2010). Additionally, this study also suggests that sponsoring student activities does not help build the brand image of the company as an employer. This has practical implications for organizations as it becomes doubtful whether organizations should spend money on sponsoring events in college campuses with the goal of attracting talented applicants. While sponsorship can be used for relation building and increasing awareness, it does not seem to have an impact on attracting any talent directly. This is counter-intuitive, and further research can be conducted to validate the findings of this research.

Conclusions

This study has examined the role of early recruitment practices in building the employer brand image of organizations. This can enable employers to attract the best students from the B-school campuses. In this study, interesting and vital insights are offered to employers to enable them to strategically focus on those recruitment activities that are effective in building this brand image. It suggests that employer brand image is influenced by media presence/publicity. Organizations would do well to work closely with public relations agencies and well as focus on activities, like those of corporate social responsibility, that will attract the attention of the media. Public relations cells should endeavour to increase the visibility of the company in the media to create a unique brand image in the hearts and minds of potential applicants.

The study is not without its limitations. The sample included only 124 students from five business schools in India, and any attempt to completely generalize the findings should take a larger sample of students from additional business schools. The study also relied on the respondents' recall of a single employer instead of a number of possible employers through a within-subjects design. This may fail to capture the larger context wherein multiple options are considered by the students. However, in spite of its limitations, the study gives valuable insights into the effects of early recruitment practices on the employer brand image in Indian business schools.

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Special Economic Zone or Special Exploitation Zone: An Analytical Perspective (Case: Singur in West Bengal)

Namita Rajput[1] and Mahua Dutta[2]

This paper reviews the state of major sub-sectors of environment in India and examines the effectiveness of policy and other measures adapted to improve their condition While country's contribution to global environmental problems such as global warming and ozone depletion may be lower than other transitional economies, the local problems related to air, water, land, etc , within the country, are quite disturbing Environmental challenges of development strategies are enormous and as such issues are no more confined to one discipline or one nation. Thus, to deal with multi-dimensional and multi-national problems, appropriate policies are required at international, national and local levels. In the paper, it is suggested that environmental policies should be based on facts and rational calculations rather than emotions and debate. If pollution abatement measures are too stringent polluters may not follow them and find alternative ways to bye-pass them. Also, if these measures are too lenient, development processes will go on deteriorating our ecosystem. Therefore, government policies and measures should focus on a strategy that strikes a balance between environmental care and the economic development in the country The SEZ policy is seen as a part of a larger objective of grabbing control of natural resources. There are many serious environmental issues which affect the sustainability and are explained in the following sections The main objective of this paper is to analyse the impact of SEZs on the environment and to propose the possible sustainable policies to overcome the same

Keywords: *Economic Growth, Environmental Laws and Policies, Socio-economic Issues, Sustainable Development, India*

Introduction

India enacted an SEZ Act in 2005, hoping to boost infrastructure, promote investments, attract foreign firms, create industrial clusters, and increase exports while creating jobs. SEZs are not novel: Previous incarnations, such as free-trade zones, have had a mixed record worldwide. But perhaps due to China's rapid growth, developing nations have taken a second look. In 2007, China attracted $84 billion in foreign direct investment (FDI), mostly through its SEZs. India had only $23 billion in FDI and a large trade deficit, so SEZs became a key part of its development strategy in 2007, China attracted $34 billion in foreign direct investment (FDI), mostly through its SEZs. India had only $23 billion in FDI and a large trade deficit, so SEZs became a key part of its development strategy. (http://www.inmotionmagazine.com/opin/bg_sez-china.html) The SEZ policy for preferential treatment given to SEZ firms is being challenged by a case filed in Indian courts, alleging the SEZ policy to be "discriminatory" and "arbitrary."Favors to SEZ firms also raise other concerns. For instance, would these advantaged firms withstand global competition once tax breaks were removed? How much employment would these zones generate? Should a government with a growing budget deficit grant five-year tax exemptions? All nations that have set up SEZs have had to deal with these trade-offs.

In India, however, these concerns have been trumped by a bigger issue i.e. land. As of June 2009, 568 formal approvals had been granted for SEZ projects, but only half of these had acquired the required land. The government's role in land acquisition, either via joint ventures or eminent domain, has many problems by virtue of this, sustainability will be a key issue over the next decade, shaping government policy, business strategy and how we live our lives." India's SEZs policy also has an influence on the environment and aggregate social and economic costs. The SEZ policy is seen as a part of a larger objective of grabbing control of natural resources. (*Sharma, Kumar Naresh, 2009*) There are many serious environmental issues which affect the sustainability and are explained in the following sections. The main objective of

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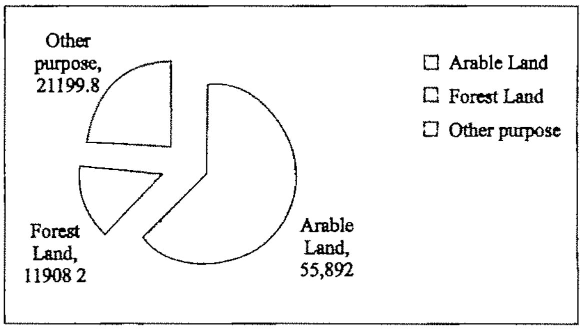
this paper is to analyse the impact of SEZs on the environment and to propose the possible sustainable policies to overcome the same. Hence in this study, the observation is based on the secondary information obtained from the government websites, reports and other research studies. A case study on Singur is taken up to analyze the impact of SEZ on the environment. The environmental analysis is done on the basis of ACEE model i.e. **agricultural** land, Compensation package, Employment Generation and Environmental issues. Hence this paper is divided into four sections. First section explains the land structure and land acquisition in Singur in SEZ and Land Acquisition. In the second section, SEZ and controversial issues referring to Singur is mentioned. The third section is about the learning from Singur case and the last section is conclusion and suggestion.

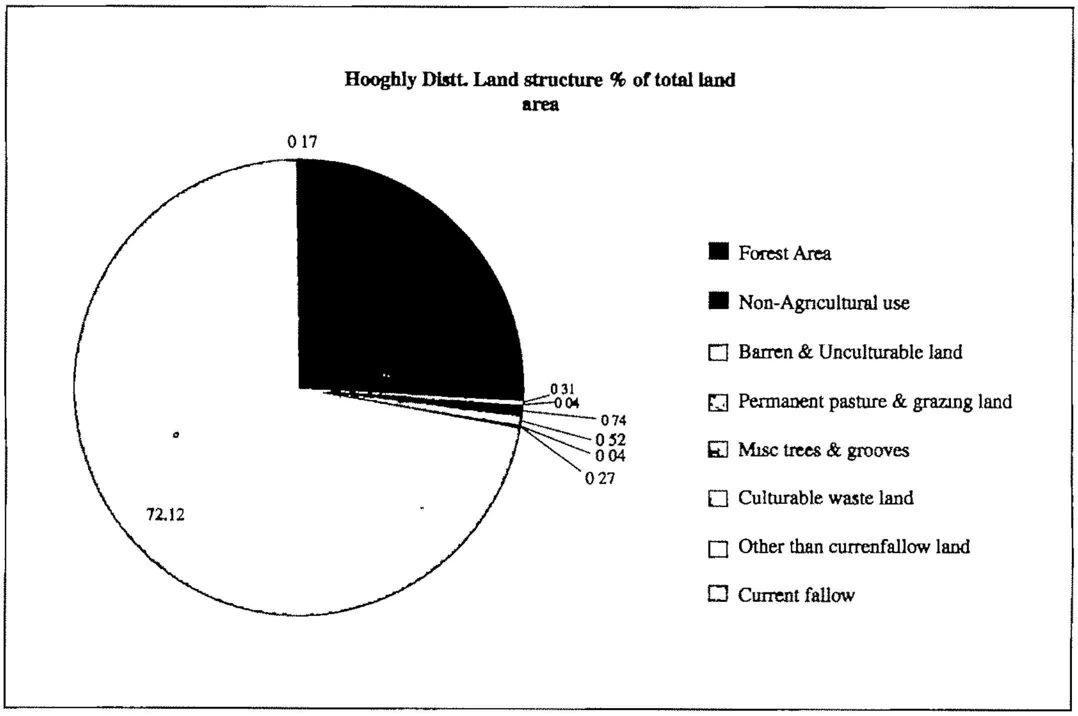
SEZ AND LAND ACQUISITION

West Bengal state which lies in the east part of India, has a land area of 89,000sq.km, which is 2.7% of the country's land area. According to the fig.1, the arable land in West Bengal is 55,892sq.km, which is more than 50% of the total area. There are 19 districts in the state and all the districts are densely populated. Although, 70% of the population is engaged in Agriculture, the service economy contributes majorly to the GDP.

Source: **www.hooghly.gov.in**



Hooghly, being one of the fertile districts of West Bengal is studied in this paper as a case. Singur, the controversial place belongs to this district. If we refer to Figure 2, suggesting the land area used in different purposes in Hooghly, we see that out of the total land area of 312.22 thousand hectares, net area sown is 72.12%,forest area is 0.17%,current fallow is 0.27%, other than current fallow is 0.04% and area under non-agricultural use and barren uncultivable land is 26.11%.



The share of population in urban area in Hooghly district is 33.47% compared to 27 97% in West Bengal and rural population is 66.53% compared to 72.03% in West Bengal. Table 1, shows that work participation rate is higher in rural areas and the population engaged as main workers is slightly more than the agricultural laborers.

Table 1: Occupational Structure in Hooghly

	Rural	Urban
Agricultural labourers	57.3%	-
Main workers	59.8%	58.9%
marginal workers	16.8%	5.7%

Source: www.hooghly.gov.in (2001 census)

The acquisition of land in Singur was carried out with the due process of law as laid down in the Land Acquisition act, 1984. (www.karmayog.org/Special Economic Zone). The process began with the publication of notifications under section 4 of the Act from the 20th of July 2006 onwards, and was completed with the declaration of Awards under section 11 of the Act on the 23rd and the 25th of September 2006. The total land acquired as on December 31, 2006 is 997 11 acres from five mouzas in Singur.

The details of the land acquired are shown in the Table 2:

Table 2: Details of the Land Acquired (as on December 31, 2006)

Name of the Mouza	total area (in acres)	land acquired (in acres)
Gopalnagar	1656.55	399.98
Beraberi	1043.82	327.21
Khaserbheri	229.62	180.59
Bajemelia	355.13	47 77
Singherbheri	310.75	41.56

Source. wbgov.com/banglarmukh

Compensation payable to the land owners has the following components:

a) Basic price

b) Solatium @30% of the basic price.

c) Interest @ 12% per annum for the period between the date of notification under section 4 and the date of declaration of award.

d) Crop compensation etc. as assessed by the collector as laid down in section 23 of the Act.

e) In addition, landowners who have submitted consent-agreement in writing under section 11(2) will be paid a further 10% on the total compensation payable.

SEZ AND CONTROVERSIAL ISSUES

Government of west Bengal has always maintained that it would be difficult for expansion of non agricultural activities to take place without incorporating land currently in use by agriculture, given the intensity of cultivation and population pressure in west Bengal. (www.business_standard.com/india/news/sez_policy_land_acqisitiongrey-area/273246.)The peasant's resistance began to take shape but Singur became the focal point against agricultural land acquisition and its first phase started in may 2006. Problems started with the governments intension to acquire 1000 acres of prime agricultural land in five revenue units (mouzas) in Singur of hoogly district which is 40 kms outside Kolkata for setting up a motor car plant by Tata motors. According to west Bengal government the Tata Group choose the land among five alternative sites offered to them. "Save agriculture committee" was formed soon after the protest. Lack of adequate compensation, long term rehabilitation plans and one sided laws in a number of cases lie at the heart of resentment and distrust. The issue was flared up as people thought that equal focus was not kept longer term interest of displaced communities and the need for industrial development. Tata had promised that in addition to the construction of the factory Singur would become a mini-auto city, with about 70 vendors moving in and an investment of Rs 1000 cores being made. Even thought the displaced farmers were given monetary compensation as well as promised jobs in the factory, this move was protested by the opposition parties. Various reasons were cited for the protests More than 10,000 families of mostly backward classes (landlords, share croppers, laborers, artisans, small traders etc.) would be displaced in the process. Also, farmers, laborers, artisans could not be absorbed in the Tata Motors.

The issues of contention were

(i) Agricultural land

Main controversy was in relation to agricultural land acquisition. People of Singur were of the opinion that if the land was given to Nano project, they would be left with neither land nor livelihood because money is not the right and adequate compensation for the land. The acquisition of 997 acres of land approximately affected 12000 agricultural land owners for the Tata Group to set up a 'small car' factory in the state. The Selected land is fertile enough with a yield rate of 2436 Kg per hectare for rice and 26604 kg per hectare for potato which is the main cash crop of the area.[1] By giving this land to Tata plant meant for Nano production, the entire farm culture in the area would die a slow death and if the greenery spreads across the horizon, the State's industrial prospects would have suffered a near fatal blow.

(ii) Compensation package

Land acquisition has emerged as the most prominent operational problem in the setting up of SEZs. It not only has a financial impact but also has social repercussions. The land owner is typically a farmer. (www.countercurrents.org/rawat301007.htm)

The other dependents on the land include landless laborers who work for the farmers. An agricultural based economic should be undertaken before acquiring any land. Only barren or single-crop land should be used for the SEZ development. There are many methods which are pursued to make the compensation to the land owners like, One-time compensation, Equity ownership in the SEZ project, providing jobs as compensation, Annuity-based payment depending on price of land, Land for Land. The total compensation planned to be paid by the government of West Bengal for the acquired land 997 acres approximately is 119 crores. Till December 31, 2006, a total of 9839 cheques, were issued and for a total amount of Rs. 83 crores was outstanding, covering 658 acres. Timing of the compensation. Even though, the stated policy is to compensate before acquisition, yet, the Land Acquisition Act still provides for compensation after sometime after paying a suitable rate of interest (12% in most cases). This lacuna has been exploited by the acquirers who delay making payments for many years It is anybody's guess, whether the people can really survive for so long with no money or assets. Another issue has been the liquidity problem for the people who after SEZ notification are disallowed from selling land to any other entity other than the developer.

The compensation was only monetary and no state-level rehabilitation policy was ordered. Also the compensation appears to be below the market price of the land rate. No adequate compensation or rehabilitation was offered to the affected. No compensation has been offered to the agricultural laborers, sharecroppers and others, who depend on this land indirectly and would also be deprived of their livelihoods, as agriculture was baked in their culture, so could not think of any other occupation beyond agriculture. Most severely affected are the people who do not have their own land. So, they would not get the compensation in their names. Hence, compensation package was not enough for survival and livelihoods of the peasants. Furthermore discussion on compensation package was not transparent and there was no participation of the affected people. Part acquisition of land may render it unproductive for initial use: If only a part of land is taken away, the remaining part would lose productivity owing to economies of scale effect. However, the person is only compensated for the part of the land that is acquired. Future appreciation in land value not taken care: Currently, there is no provision for sharing a part of the positive externality generated from the project with the landowner.

(iii) Employment generation

Large-scale employment generation can barely be seen as a main benefit flowing out of a fully automated car factory, though the claim is to create 10,000 jobs, of which only the unskilled ones would benefit the locals. Once skilled in their traditional occupation of farming, the very same people would be situated, if at all, at the bottom rung of the automobile workforce. It would perhaps be a fair test of skills, to have a few city-bred computer engineers earns their living by tilling the land. How many of the displaced people would have drove the "people's car" when it would have rolled out. Yet, the locals would have to disproportionately shoulder any industrial risks associated with the plant. As and when the Tata's patent a certain automobile-making technology, will there be room for acknowledging the inputs provided by the peasantry and the subsidizing state in terms of reasonable financial compensations? (www.sanhati.com/wp content/updates/2007/07/dheeraj_singh_term_paper.pdf) the one hand, liberalization advocates the withdrawal of state, on the other, there is increasing intervention by it in subsidizing the interest of the powerful. Healthy market mechanisms, paradoxically, do not encourage the Tata's to buy the required land at fair market price. However, farmers have no means of earning their living once land is gone: The earnings from land come in the form of annual, monthly or seasonal payments. However, cash is a onetime flow which most poor people don't know what to do with. In absence of adequate knowledge about productive employment of this cash, many a times it goes waste. Essentially, it is unfair to replace livelihood with mere cash.

(iv) Environment Impact

The SEZ units are exempted from environmental impact analysis under the provision of the Environment (Protection) Act. Further, the development commissioners are empowered to issue consent and no objection letters in consultation with the officers of the state pollution control board. The units, which are classified as non-polluting industries, do not require a consent letter. The development commissioner can give clearance without consulting the pollution control board. The units are permitted to submit a compliance report for maintaining prescribed pollution standards. Although the development commissioner has powers for a random check, the units within the SEZ are free to follow their own methods to maintain environmental standards, quality and quantity of electricity, an important and crucial public utility, has been given top priority in the SEZ. The water supply and solid and sewage waste management is the responsibility of the SEZ authority. According to the (Report on "The SEZ threat to water and food security", www.sanhati.com/articles/221/-) Development of the SEZ would involve a large amount of construction activity that is expected to have adverse impact on the environment albeit temporarily during the construction phase. However if the environmental issues are not addressed during the construction phase, it could lead to irreversible damage to the environment. The water body is expected to be sensitive to changes in quality due to proposed disposal of treated effluent and sewage. It will therefore be required that treated effluent and sewage be disposed off by means of a marine outfall. Apart from pollution generated from industrial operations, increased traffic in the area would give rise to air emissions. The levels of SPM, SO2, NO2, and CO are expected to rise. However, as seen from the baseline data, the levels of these pollutants are generally well below the prescribed AAQ standards. Increase in vehicular traffic is not expected to significantly add to the ambient levels. Noise levels are expected to rise in the area due to increased movement of heavy vehicles.

Lessons from Singur

There are few lessons which other state governments must draw from Singur debacle.

(i) **Transparency and Openness must be Adhered to:**

Every state wishing to attract industrial investment has to look for "anchor investors' (project which expedite industrial production) and If needed, will offer special incentives for such projects. The manner in which such incentives are decided within the government should be transparent. *And the details of the incentives should be made public.* If only (West Bengal chief minister) had decided to make public his special incentives package for the Tatas for the Singur plant.

(ii) **Importance to Political Management of "Anchor Projects"**

There must be given due importance to political management of "ANCHOR PROJECTS "also as economic management gets. This is one area which needs lot of attention .Ensuring allotment of land and other infrastructure support for a project the size of the Nano plant was important. Equally important was the need to assess and anticipate the mood of the ordinary people in the Singur area. Bengal government should have gone out of its way to deal with the aggrieved people and speak directly with them, instead of allowing an opposition leader a free hand.

(iii) **Closer Interaction was needed between the Company and the People**

Finally, the state government should not have allowed the Tatas to completely divorce themselves from the people of the Singur area. Modern industries have to function and prosper within a larger set of stakeholders including workers, shareholders and people living near the project. In Singur, the Tatas were seen as negotiating only with the West .Bengal government and securing for themselves a good deal. For the long-term growth of the Singur Tatas should have built direct ties with the people.

(iv) **Seek to Answer to Political, Social and Economic Issues in Advance:**

It's better to seek answer to political, social and economic issues before hand in order to avoid confrontations at the later stages., Industrialist should allow starting their projects only after having completely the agreement from the parties concerned, done with procedures relating to transferring of land, and crafting the plan for rehabilitations. (www.casi.ssc.upenn.edu/iit/rjenkins)

(v) The next lesson is that if there is desire and courage then the fight between agriculture and industry could be solved a fight that has slowed the growth of the country.

(vi) Various steps of the land-acquisition process occur within a set time-frame. To minimize displacement, the policy recommends that projects should not be established on land that is already being irrigated or farmed intensively.

(vii) Participatory approach should be adopted as the strategy for implementing such projects, So that everyone's interest is vouched in the right perspective.

(viii) They should be a complete stop on unnecessary and unjust land eviction of farmers and communities of the affected areas.

(ix) Rehabilitation and compensation policy should be viable and should give the right solution, "Land for Land", and no money.

(x) The least we need is a thorough study of this phenomena and a vigorous debate.

Conclusions

As we have seen that SEZs have an important impact on the economic and social implications. The SEZ policy is seen as a part of a larger objective of grabbing control of natural resources. There are many serious environmental issues which affects the sustainability. When land is acquired on such massive scale, the water requirement for such SEZs would be huge and would have very large impact on water access for the surrounding area. Majority of controversies vis-à-vis environmental issues centers around issue of land and water resources as both are connected. It is feared that water will become more and more a marketed commodity, with diminishing control of ordinary people over it. Water being vital for human survival, water wars is likely to result. Land grab and water grab could seriously jeopardize food security. Once the land acquisition is done, SEZ's can have three types of impact on access to water for the people in the SEZ area. First would be due to the diversion of water for use within the SEZ. Second impact would be the impact of release of effluents from the SEZ. Thirdly, the conversion of land to SEZ would mean destruction of ground water recharge systems. There had been conflicts between the zones and the local residents on water issues. The reason is as in India, right to extract groundwater continues to be connected with the ownership of land. Hence, SEZ's even in a relatively small area can pump out huge quantity of water, drying of the wells of the surrounding area as they have powerful equipments to so leading to a chaos.

If SEZs are seen to be successful in the future and more cultivated land is acquired, they will endanger the food security of the country. This does not include other income lost (for instance of artisans) due to the demise of local rural economies. It has been seen from Singur case that farmers still await rehabilitation. Almost 80% of the farmers were labourers in the farms and landowners were not farmers. This made them mere landless farmers. Far more families and communities depend on a piece of land (for work, grazing) than those who simply own it. Moreover, one can see in Singur that a controversy has resulted in no mans land. Now the disputed land is neither used for cultivation nor for industry set up Thus, SEZs by itself will distort land, capital, and labour cost, which will encourage relocation or shifting of industries in clever ways that can't be stopped affecting the environment adversely and also this will be further aggravated by the proliferation of a large number of SEZs in and around metros.

Besides sustainability environmental issues which is the main there are theoretical grounds and empirical evidence to suggest that at the worst the SEZ policy can lead to serious and adverse consequences including social conflict, civil strife and breakdown of democratic institutions. It is also likely to lead to increased inequalities, and possibly shrinking of economic space for the ordinary people by making their production more unremunerative.

Hence Special Economic Zones, are posing big threat to the farmers and agriculture sector. It is a completely anti people and anti environment scheme. It is also a threat to the water security and food security for the areas where SEZs are proposed and would certainly have an impact on the national agricultural sector. The farmer voice is "the government is backstabbing the backbone of the society by stealing land for the SEZs "but the government has a reverse opinion and portrayed, the SEZ as a magnanimous step for development of the area and the local community in the villages. However, the villagers very well understand that development of local community is just hogwash, and is a part of the government's efforts to gain legitimacy for the displacement resulting from the SEZ. There should be a rigorous scanning of any big project from all angles before finalizing as it may cause environmental degradations and unsustainablity. We should care for people, profits and planet to make a project a success rather than a failure.

Suggestions

From our understanding of the issue, we have following suggestions for improvement of the situation.

Policy Level

(i) SEZ and other such projects should be planned in low productivity lands which Cause least amount of displacement.

(ii) Compensate livelihood by livelihood by providing acceptable alternatives.

(iii) Recognize the landless laborers and other dependents to compensate them (could be in the form of a few months income).

(iv) The law should provide that any acquisition would take place only after the full compensation has been disbursed.

(v) Farmers should not be left with partial and unproductive pieces of land after acquisition.

Implementation Level

(i) Locals should be consulted before project approval, and subsequently made part of decision making body for the implementation phase.

(ii) Provide stake in upside of the land value due to proposed project.

(iii) Market value of the land should be determined through direct negotiation between the developer and the land owners without government intervention. Only in extreme cases of holdout by a few farmers, covering less than say 10-20% of the entire project area, Government may step in to acquire.

(iv) Reasonable rehabilitation of the entire dependent community, including landless laborers, should be done before the acquisition.

(v) Provision for health and education should be taken care of in the rehabilitation area.

(vi) Guidance on investment management should be made available to the compensated.

(vii) The Local activists can come together to arrange for financial plans like LIC annuity for the interested, so as to arrange for a regular income from the single compensation cash flow.

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Leadership Development Intervention: An Experimental Study

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The intent of the present paper is to find out the effectiveness of a Leadership Development Intervention in improving Leadership Skills among students. Three hundred and forty three students at P.S G College of Arts and Science, Coimbatore, India formed the sample for the present investigation A Single group Pre-test, Post-test and Follow-up quasi-experimental design was used All the students received the Leadership Development Intervention voluntarily and were assessed at Pre and Post-test and Follow-up periods. The Intervention was delivered in 40 sessions included Training and Lecture Methods. Effective skill based techniques were used for the students enhancement of Leadership Skills The Leadership Style Questionnaire developed by Marshall Sashkin and Morris (1987) measuring 6 Dimensions of leadership style such as Management of Attention, Management of Meaning, Management of Trust, Management of Feelings, Management of Risk and Management of Self was used before, after and Follow-up of the intervention. Repeated Measures ANOVA was used to differentiate the difference between the Pre, Post, and Follow- up phases The Results indicates a significant difference in three times of assessment of Leadership Skill in the Management of Attention, Management of Meaning Time Management, Management of Risk and Management of Self. Study results indicated the usefulness of a Leadership Development Intervention among students.

***Keywords:** Leadership Development, Leadership Skills*

Introduction

Leadership is an important and necessary skill for achieving individual, group and organizational performance. It is the ability to persuade others to seek defined objectives enthusiastically. It is the human factor, which binds a group together and motivates it towards the goal. More clearly, it is a process whereby one person influences others to work towards a goal and help them pursue a vision. A leader inspires his followers with a vision and helps them to cope with changes. Leaders start by articulating a direction or vision of what future might look like, then develop strategies for producing changes needed to move in that direction. Leadership is "the ability to persuade others to seek defined objectives enthusiastically. It is the human factor which binds a group together and motivates it towards goals" (Keith, 1967).

The observation that leadership has an effect on individual well-being would come as no surprise to any working adult (Gilbreath, 2004). Leadership has been linked to an array of outcomes within occupational health psychology: positive outcomes such as psychological well-being (Arnold et al., 2007), and organizational safety climate (Zohar, 2002) and negative outcomes, including employee stress (Offerman and Hellman, 1996), cardiovascular disease (Kivimaki et al., 2005), workplace incidents and injuries (Barling et al., 2002; Kelloway et al., 2006; Mullen and Kelloway, 2009) and health related behaviours such as alcohol use (Bamberger and Bacharach, 2006). The study on Leadership Style and Team processes in self-managed teams done by Stephanie (2008) team processes are explored within self-managed teams that develop different leadership styles. In particular, two leadership styles are compared: shared leadership and single leadership. The results of the study suggesedt that teams with shared leadership had motivational and cognitive advantages over teams that took the traditional approach of relying on a single leader.

Sosik and Godshalk (2000) found that transformational leadership behaviour (e.g., social support provided through mentoring – a form of individualized consideration) indirectly predicted reduced job-related stress. Bono et al., (2007) examined the effects of transformational leadership on stress and satisfaction at work.

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Supportive leadership enhanced the success of a - broad band organizational health promotion programme designed to reduce obesity, smoking and alcohol use (Whiteman et al., 2001) as well as programmes focused specifically on single behaviours such as smoking cessation (Eriksen, 2005).

Students who dedicate time to leadership development experiences strongly increase their leadership skills, the ability to set goals, to make educated decisions, and utilize conflict resolution skills. They also develop a dedication to helping others develop their own leadership skills, get involved with programmes in their communities, and work with racial and ethnic groups to promote understanding and advocacy of leadership (Astin and Leland, 1991).

Kouzes and Posner (2002) claim that enabling self-leadership, providing choice, developing competence, confidence and fostering accountability are necessary factors in strengthening others to act. College students and early career workers need to recognize that "leaders accept and act on the paradox of power: we become more powerful when we give our power away".

Empowering others to act can be achieved by creating a climate of trust, listening to others, connecting others to sources of power, educating and creating a learning environment. According to Dugan (2006a), leadership is a relationship-building, developing, procedural, educated, and transformational experience. The training of leaders for the future has been noted as one of the focal points of higher education's missions.

Mullen and Kelloway (2009) examined data from both the 54 participant leaders and 115 matched respondents in order to assess the effectiveness of the training. They found that participation in training resulted in improvements in leaders' own safety attitudes, intent to promote safety in the workplace and safety-related self-efficacy. Avolio et al., (2009) provided a comprehensive review of the effectiveness of leadership interventions. Drawing on data from over 200 studies over a period of more than 50 years based on a variety of leadership theories, Avolio et al., (2009) reported evidence that leadership interventions do in fact result in enhanced leadership.

Increase in opportunities to participate in leadership development activities would allow students the chance to gain a sense of responsibility and ownership. This may be a way to improve these low levels of academic achievement, high levels of student boredom and disaffection, and disproportional dropout rates in urban areas (National Research Council & Institute of Medicine, 2004).

A grounded theory of high-quality leadership programmes: perspectives from student leadership development programmes in higher education by Darin (2008) revealed 16 attributes of high-quality Leadership programmes organized into three clusters: (a) participants engaged in building and sustaining a learning community; (b) student-centered experiential learning experiences; and (c) research-grounded continuous programme development.

The training of leaders for the future has been noted as one of the focal points of higher education's missions (Dugan, 2006b). Management of stress and stressors as college students differ markedly in the effectiveness of their adjustments to these stressors (Matheny et al., 2002). It has been established that cognitive-behavioural stress management and health promoting interventions can reduce both perceived and physiologically measured stress irrespective of the method of delivery (Eisen et al., 2008, Lustria et al., 2009). Some stress management experts contended that person achieves more effective social interactions, ones mental stress decreases and happiness increases, irrespective of the coping strategy used (Lazarus and Folkman, 1984; Hirokawa, Yagi and Miyata, 2002). In addition, pioneers in the field of positive psychology found that happiness levels and overall well-being can be enhanced through several useful interventions involving multiple exercises (Fordyce, 1977; 1983).

An exploratory study of Entrepreneurial Leadership Development of University Students done by Bagheri (2009) shows that the university entrepreneurship development programmes facilitates entrepreneurial leadership development of students in many ways including experiential learning, social interaction learning and opportunity recognition. Entrepreneurial leadership development occurs in a process of transforming the knowledge acquired from experience and social interactions to identify the opportunities of personal development creation.

The study done by Garger and Jacques (2007) investigated the impact of self leadership on student performance. Students from a mid-sized, regional, comprehensive university returned completed surveys. Results suggest that students' transformational self leadership positively correlates with grade point averages while passive/avoidant self leadership negatively correlates with grade point averages.

Need for the Study

The problem of leadership in different walks of society has been a perennial subject of discussion in human history. Greater attention has been given for the study of this concept during the past few decades. This emphasis is due to the presumed importance of the leadership function at organizational and social level. Many of today's executives are expected to be both able managers and strong leaders. Most experts believe they understand the basic ideas underlying effective management, but leadership is a much more elusive phenomenon. Indeed, the mystique of leadership is one of the most widely debated topics; millions of dollars are spent annually by the companies on leadership training programmes.

It is only natural that people should try to draw lessons, through analysis not only as a judgment on the situation or the individual, but as some kind of guidelines for future. Usually one finds that military leaders and political leaders guiding the nations have been invariably discussed and analyzed for obvious reasons. These have given rise to a lot of fascinating literature on leadership that is of great value.

In the modern complex society, thousands of individuals are appointed or elected to shoulder roles and responsibilities of leadership at junior, middle and senior levels in factories and firms, schools and colleges, business and financial institutions, dispensaries and hospitals, in civil and military organs of the state's scientific and research institutions and so on. On their quality and effectiveness depend on strength, prosperity and happiness of the society. Thus, the democratization of society, growing complexities of economic life, advances in scientific and technological fields, expansion of industry and business, development of behavioural sciences, increasing role of government in society, growing intensity of international impact from different angles, rising expectations of the people in developing countries and similar other factors have practically underscored the social significance of leadership in a wider context. Adequacy of leadership is very important for the different sectors and groups in society, business, industry, administration, management or public affairs.

The present study focused on studying the Effectiveness of Leadership Intervention Programme among college students in terms of Management of Attention, Meaning, Trust, Risk and Self. The study also supports the effectiveness of leadership interventions and emphasizes the importance of Leadership Skill based training in academic context. There are several kinds of student organizations in school and universities and it is only necessary that educational institutions should give attention to leadership skills development for students. Through this kind of programme, students can learn how to become and how to be good and effective leaders. There can be many kinds of student leaders and the kind of leadership that they must have will depend on the situation they are in. And through leadership skills development programme, students will be able to better understand different Leadership Styles that best work for certain situations.

Objective

The Objective of the present study is to find out the effectiveness of a Leadership Development Intervention in improving Leadership skills among students.

Method

Design: A Single group Pre-test, Post-test and Follow-up quasi-experimental design guided the study. The leadership style questionnaire was administered to all the subjects before the beginning of the Intervention (Pre/before). After 40 sessions of Intervention the leadership style questionnaire was once again administered to all subjects (Post/after). After a period of one month the leadership style questionnaire was once again administered to all the students (Follow-up).

Sample: Three hundred and forty three students at P.S.G College of Arts and Science, Coimbatore, India formed the sample for the present investigation

Interventions Used: The Intervention was delivered in 40 sessions, included Lecture and Training Methods. Lecture Method involves Self-esteem, Assertiveness, Leadership, Goal-Setting, Stress Management, Creativity, Memory, Motivation, and Transactional Analysis. In Training Method Ice Breaking Exercise, Profile About Themselves, Memory and Attention Game, Tower Building Game, Group Discussion, One Minute Presentation, Yoga and Relaxation. The duration of the Leadership Development Programme was 40 sessions.

***Tool Used*:** The Leadership Style Questionnaire developed by Marshall and Morris (1987) measuring 6 Dimensions of leadership style such as *Management of Attention-* Leaders pay close attention to people with whom they are communicating. They help others to see the key points clearly. They have clear understanding or priorities of different issues under discussion; *Management of Meaning-* It focuses on the leader's communication skills, specifically the ability to get the meaning of a message across, even if this means devising some innovative approaches; *Management of Trust-* The key factor is the perceived trustworthiness to follow through on the promises, avoidance of "flip-flop" shifts in position, and willingness to take clear position; *Management of Self-* Is concerned with the general attitudes towards self, others and their feelings, as well as for "taking care of" feelings about oneself in a positive sense; *Management of Risk* – Effective leaders are deeply involved in what they do and do not spend excessive amounts of time or energy on plans to protect themselves against future. These leaders are willing to take risks, not on a 'hit or miss' basis but after a careful estimation of the odds of success or failure; and *Management of Feelings-* Leaders seem to generate consistently a set of positive feelings in others. Others feel that their work becomes more meaningful and that they are the "master" of their own behaviour i.e. they feel competent. They feel a sense of oneness with their colleagues and co-workers. The questionnaire had a reliability coefficient of 0.71, 0.81, 0.76, 0.72, 0.86 & 0.91 respectively. The content validity was also established.

Results and Discussions

Table 1: Means and S.D's of Pre, Post, and Follow-up in the Leadership Skill of the Students

Variables	PRE		POST		FOLLOW-UP	
	MEAN	S.D.	MEAN	S.D.	MEAN	S.D.
Management of Attention	7.34	3.11	13.41	2.76	15.24	2.71
Management of Meaning	6.56	3.02	7.97	4.24	15.73	2.59
Management of Trust	8.03	3.60	13.78	4.55	8.27	3.18
Management of Self	7.07	3.56	13.41	2.76	9.36	5.61
Management of Risk	9.33	4.17	12.33	3.27	4.88	4.53
Management of Feeling	8.01	3.63	9.01	5.45	8.40	4.13

Table 2: Approximate 'F' (Greenhouse-Geisser) for the Pre, Post, Follow-Up in the Leadership Skill of the Students

Variable	Dimensions	Type III Sum of Squares	df	Mean Square	F
Leadership	Mgt. of Attention	11737.636	1 869	6281.685	655.331*
	Mgt. of Meaning	16739.629	1.917	8731.599	740.452*
	Mgt. of Trust	7276.169	1.861	3910.739	226.007*
	Mgt. of Self	7061.280	2	3530.640	198.288*
	Mgt. of Risk	9634.171	1.908	5049 957	285.161*
	Mgt. of Feelings	173 458	1.846	93.989	4.484**

Error	Mgt. of Attention	6125.567	639.044	9.586	
	Mgt. of Meaning	7731.705	655.659	11.792	
	Mgt. of Time	11010.498	636.312	17.304	
	Mgt. of Self	12179.068	591.926	20.575	
	Mgt. of Risk	11554.496	652.458	17.709	
	Mgt. of Feelings	13228.542	631.163	20.959	

** Significant at0 .05 level * Significant at 0.01 level

Table 1 shows the Mean, S.D's, of all dimensions of the Leadership Skills of the students in the Pre, Post and Follow-up phases. Table 2 shows the F value for the Leadership Skill Questionnaire for the students across the Pre, Post and Follow-up. The Repeated Measures ANOVA results show a significant difference at 0.01 level for all the variables except the variable Management of Feelings which was found to be significant at 0.05 level. This indicates that the Intervention Programme had certainly had an impact on the students. The Leadership Skill which is very much essential for management of attending to others, conveying what is required to be conveyed, gaining trust of others, understanding what is going on within oneself and others, taking calculated measures towards success, and creating confidence in others.

Table 3: Sidak Post hoc Comparison among Pre, Post, and Follow-Up phases of the Students in the Leadership Skill

LEADERSHIP SKILLS	MEAN	S.D.	GROUP	FOLLOW-UP	POST	PRE
Management of Attention	15.24	3.1	FOLLOW-UP		**	**
	13.4	2.75	POST	**		**
	7.33	2.7	PRE	**	**	
Management of Meaning	15.73	2.59	FOLLOW-UP		**	**
	7.97	4.23	POST	**		**
	5.55	3.02	PRE	**	**	
Management of Trust	3.26	3.18	FOLLOW-UP		**	N.S
	13.73	4.55	POST	**		**
	3.02	3.6	PRE	N.S	**	
Management of Self	9.36	5.6	FOLLOW-UP		**	**
	13.40	2.75	POST	**		**
	7.07	3.56	PRE	**	**	
Management of Risk	4.88	4.16	FOLLOW-UP		**	**
	12.35	3.27	POST	**		**
	9.32	4.16	PRE	**	**	
Management of Feelings	8.39	4.12	FOLLOW-UP		N.S	N.S
	9.01	5.44	POST	N.S		**
	8.01	3.63	PRE	N.S	**	

** Significant at .05 level N.S – Not Significant

The results of the Sidak Post hoc Comparisons is to differentiate the difference between the Pre and Post, Post and Follow-up of the students in the Leadership Skills are presented in the above Table 3. It indicates a significant difference in three times of assessment of Leadership Skill in the Management of Attention, Management of Meaning, Management of Trust, Management of Self, Management of Risk and Management of Feelings.

With regard to Management of Attention of leadership skill implies how far the individual pays close attention to people with whom one is communicating. There is a significant difference among the students in the Pre and Post and Post and Follow-up phases. This may be due to the interaction between the students during the programme. They were given opportunity to focus on the key issues under discussion and help others to have clear ideas about the relative importance or priorities of different issues under discussion. Role plays could have helped to make one to direct others and influence them. In this dimension, there was a significant difference in the Follow-up phase. When compared to the Post phase, the students improved their attention level in the follow-up phase because they followed the instructions given during the Leadership Development Programme. With awareness and interest, they understood that attention skill is very important for every human being. Evidence suggests that measures of individual aspects of self-regulation, such as attention, also relate to measures of academic achievement, independent of prior levels of cognitive ability. A study by Yen et al., (2004) explored the longitudinal relationships between individual learning-related behaviours – such as attitudes towards learning, attention and task persistence and flexibility – and subsequent academic achievement in literacy and numeracy. Many authors emphasise that skills such as attention, persistence, flexibility, motivation and confidence are more easily amenable to change through teaching and intervention (Diamond et al., 2007). Follow-up studies of children identified as having attention-related problems also found that as adults they have lower levels of educational attainment, occupational rank, job performance and self-esteem (Mannuzza and Klein, 1999). Research also indicates that, when considered separately, attention and related skills are more predictive of later achievement than more general problem behaviours (Barriga et al., 2002; Hinshaw, 1992; Konold and Pianta, 2005; Ladd., Birch and Buhs, 1999, Normandeau, 1998; Trzesniewski et al., 2006).

There is a significant difference among the students in the pre, post and follow-up phases with regard to Management of Meaning. This dimension throws light on the students' communication skills and also their ability to get the meaning of a message across. This can be due to the group discussions conducted during the programme. The students were divided into different groups and they were instructed to discuss any topic. Later on, they were asked to present their view points in front of the group one after the other. During this session, they improved their communication skills, language ability and they were given chance to express and share their feelings. They developed a sense of group cohesiveness and understood the social norms. When compared to the post phase, students improved their management of Meaning in the follow-up phase. The students understood that attention is important and they realized that the message should be passed meaningfully; only then the output could be effective. Pincus and DeBonis (2004) contended that leadership is at its heart a communication process because it seeks to strengthen human relationships by increasing trust and understanding. A student who lacks interpersonal communication skills will not only experience problems communicating but also during the learning process as discussion forms the very basis of today's teaching and learning process (Yahaya and Nordin, 2006). This inadequacy will indirectly erode a student's confidence and self-concept thus affecting his academic performance.

There was a significant difference among the students in the pre, post and follow-up phases with regard to Management of Trust. This could be possible due to the Tower Building Game played during the programme. In the Tower Building Game, the students were divided into different groups. They were instructed to build a tower using wooden blocks. One individual among the group should be blind – folded and the other group members should help to construct a tower. The blind folded person trusts his group members, following the instructions given by them and builds a tower. Without having trust on others, one can't survive in this world. Because man is a social animal and always depended on others, willingness to take positions is an important factor to develop one's personality. The students should have trust in themselves which will lead to having trust in others. There is a change in the follow-up phase when compared to the post phase. This could be because of the student's lack of opportunity in trusting others. Team structure was significantly associated with team performance, whereas trust and conflict management contributed to teamwork satisfaction. (Liu et al., 2007). Lapidot, Kark, and Shamir (2007) found that leader benevolence was most important to building trust and that ability and integrity were more important in situations where trust was lost. Research evidence is mounting that trust is important to organizational and individual performance (Dirks and Skarlicki, 2009; Mayer and Gavin, 2005; Davis et al., 2000). Trust was essential for relationship development; trust taught them more about themselves, and by learning to trust these individuals felt more self-confident (Mietzner and Lin, 2005).

The results on Management of self depict the difference among the students in the Pre, Post and Follow-up phases in the Leadership style. This dimension explains the students' attitudes towards their self and their feelings. The students were directed to introspect themselves asking some questions as given below and write responses in a piece of paper.

What are highest and least accomplishments?

What are your strengths and weaknesses?

What is your real aim in life?

Who am I? etc.

The received responses were shuffled and randomly interchanged among the students and they were asked to present in front of the other students. They were asked to practice this, while presenting the others' achievements, ambition, strengths and weaknesses. The students were able to know about others' abilities and it would be helpful for them to improve and learn more skills and make it less frightening and encourage the belief that, "I can do it" i.e. facing the audience, speaking in front of the audience etc. In this dimension, there is a significant change in the Pre, Post and Follow-up phases. In the follow-up phase, the students did not concentrate on their self because they were busy with their curriculum. Their main aim was to get good marks in their semester examination. In future they might get a chance to identify their own self for the vocational purposes. Self Management approach offers a number of potential benefits for secondary students (Cole, 1992). Self- Management procedures have been effective in promoting a wide range of social and academic behaviours among students with mild disabilities in school settings (Nelson et al., 1991). A student's ability to plan is but one skill among several for student self-management, the training of which is studied by Gerhardt (2007). Self management procedures have been considered to have many benefits including the likelihood of increased maintenance and generalization of obtained behaviour change; they help students accept additional levels of responsibility for their own behavior, and are effective with a variety of students, (Kern et al., 1994). "Consistency is the essence of leadership" (Badaracco and Ellsworth, 1989)

From the table 3 it can be observed that there is a significant difference among the students in the Pre, Post and Follow-up phases with regard to Risk Management of Leadership Style. The Risk Takers are those who have the willingness to take risks, but after careful estimation of success or failure. The evolution of Enterprise Risk Management has emerged both as a concept and a management function (Dickinson, 2001). The students showed very high interest in taking risks in the post phase. They were very much involved in what they did because the students were also learners, so they were in a better position to take more ventures. In the follow-up phase, they scored low when compared to the post phase. The students tried to be on the safer side and they were not ready to accept responsibilities and they planned to protect themselves from danger. The students were not ready to spend excessive amounts of time and energy. The result of research by Reynaldo (2002) showed students were weakest in opportunity seeking; risk taking, and self-confidence and practicing entrepreneurs were weakest in Risk Taking.

A significant difference was noted among the students in the Pre, Post and Follow-up phases regarding the Management of Feeling. Leaders seem to consistently generate a set of positive feelings in others. They feel a sense of unity with their teammates as they are trained to understand the feelings of others when they are in a group. Staying in groups and interacting with one another is the primary necessity of human species. Group life, not only gives satisfaction but also becomes instrumental in fulfilling certain desires and wishes. Sharing one's feelings or ideas with different people gives a great pleasure because one's own worries are expressed and shared. Group living overcomes the sense of loneliness. Some people felt very diffident to share with others but by observing the teammates, they started to share and expressed their feelings. They developed a sense of proximity. There is a change found in the follow-up phase of Leadership Development Programme when compared to the post phase. This may be because the investigator did not give any intervention before the follow-up assessment and the students found no time to express and share their feelings, because of their routine activities. A number of studies found different factors that contribute to increasing the rate of attrition among doctoral students. Some of these factors are directly related to the students themselves while others are related to the design and structure of the doctoral programmes as well as the demographic specifics of their student population (Hockey, 1994; Lewis, Ginsberg, Davies and Smith, 2004). Among the emotional issues that are often neglected in doctoral programs is the feeling of isolation that is experienced by the students during their journey to obtain their doctoral degree (Lewis et al., 2004). Studies of college dropouts associated dropping out with the aversive side of the "fight or flight" formula; that is, students feeling a mismatch between themselves and their college; wish to distance themselves from the source of stress and the college environment (Falk, 1975).

Conclusion

It can be concluded that Leadership skill can be fine tuned by using leadership training programmes for students. "The Leadership Development Programme" was found to be effective in improving Leadership Skills among the students on various aspects such as Management of Attention, Meaning, Trust, Self, Risk and Feeling. In order to have a sustainable impact on the students the leadership development programmes must be conducted as an ongoing programme at college levels. This will enable the future generation to have constant self directed effort towards improving ones' leadership skill and thus in turn leading to be a way of life.

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Globalization and Economic Asymmetries in International Trade and Development: Challenges, Opportunities and Their Impact on Global Employment

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Economic asymmetries can be described as differences in economic conditions among different countries and different regions in the world This paper focuses on the various key features of contemporary globalization and international competitiveness, underscoring the growing interdependence of the developed and the developing countries and the resultant political as well as economic stakes. Globalization has created many challenges such as increased global competitiveness, sustenance of global value chains, need for global off-shoring and outsourcing, maintenance of continuous growth and development in both the developed as well as the developing countries, need for global-scale integration and coordination in labour movement, as well as understanding the complexities of relationship between globalization and employment Some of the areas to be considered while speaking about opportunities created by globalization are opportunities of creation of millions of jobs for the people in developing countries like China, India and South East Asian countries, which become a key driver for their economic development, availability of an array of knowledge intensive business services, such as engineering design, accounting, legal and medical advice, financial analysis and business consultancies, inflow of technology from developed to developing countries and outflow of trained manpower from developing to developed countries specially in the areas of IT and software development industries The paper aims to bring out a comprehensive viewpoint on both challenges faced and opportunities created by economic asymmetries and globalization.

Keywords: *Globalization, Economic Asymmetries, Value-chain, Outsourcing, Off-shoring, Supply-base, Global Employment*

Introduction

International trade is not a recent phenomenon; nor is it a product of 20th Century. In the early times the Assyrians, Phoenicians, Greeks and Romans all engaged in extensive cross border trade. Evidence show that Assyrian commercial organization of 2000 BC already had many of the traits of modern multinational companies (MNCs), complete with head office and branch plants, clear hierarchy, foreign employees, value adding activities in multiple regions and search for new resources and markets. Roman organizations spanning Asia, Africa and Europe, are heralded as the first "global" companies, that covered the whole of the then known world.

In the modern era globalization has acquired a different hue, though some features of the "globalization" of ancient times can still be found. The global trading countries are now broadly divided into two categories the developed countries and the developing countries / economies. What separates them is among other things, the economic asymmetries between them, the cost of living the state of technological development, availability of trained manpower etc.

We also have Multinational Corporations (MNCs) who operate in different countries and make the best use of resources available and market available in their spheres / areas of operation. The global trade besides other activities involve off-shoring and outsourcing.

Currently, about 90% of all consumer electronics sold in United States are produced offshore. The Vast majority of these imports come from developing countries. The rise of global outsourcing has triggered waves of consternation in advanced countries about job losses and degradation of capabilities that could spell the disappearance of entire national industries. Many experts have dismissed these concerns, arguing that global outsourcing should be embraced as a mechanism, for advanced countries to shift out of low value activities and old industries, freeing

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up capital and human resources for higher value activities and development of newer industries and cutting edge products (the Economist, 2004). But clearly such assurances do not comfort those whose economic survival has been put at stake by direct competition with firms and workers with low wages and increasingly high skills. On the other hand it is also seen that developing countries compete with one another to offer MNCs the lowest operating costs (Kaplinsky, 2004) which , some claim leads to only "immiserizing" their growth and will result in a "race to the bottom".

Global outsourcing has given rise to new and important set of economic structure in the world economy that we refer to as 'global value chains" (Gereffi and Kaplinsky, 2001). The spread of global value chains has created a new level of fluidity in international economy that appears to be having a profound impact on the quantity and quality of jobs generated throughout the world. The acceleration of outsourcing in 1990s signalled the "de-verticalization" of modern corporation i.e. instead continually growing in size and shape the trend was on specialization and focus on "core competencies" (Prahlad and Hamel, 1990). The process created new interdependencies between lead firms and suppliers as each value chain actor learned how to quickly and effectively combine distinct complementary sets of capabilities with other actors in the chain

Objective of the Study

The purpose of this study is to carry out an analysis of the effects of globalization on trade and commerce that has opened the doors for trade between different countries of the world and ascertain how the economic asymmetries existing between these countries have resulted in the development of many new phenomena such as outflow of jobs from the developed to the less developed countries, due to outsourcing and off- shoring of manufacturing processes of products and services, creation of global value chains across national boundaries, creation of global supply bases, outflow of financial capital and technology from the developed to the developing economies and the resultant political and economic ramifications of their effects across the world. The study also aims to identify various challenges that are being faced and the opportunities being created due to globalization and ascertain what could be implications from the point of view of the future managers of the world who will have to be globally oriented and will be required to handle business in the global context and not merely at the domestic levels. They will specially be required to make "buy" or "make" decisions from cost effectiveness and quality of products / services point of view which in other words would mean making decisions about whether to go for out sourcing or off-shoring of products and services they are dealing with. All these will require them to have a detailed knowledge of skilled manpower availability, market locations and material resource availability from the point of view of quality and cost, in the different regions of the world. Knowledge of this kind will no doubt help them to formulate and develop strategies that would be needed for their future operations.

Methodology

A combination of globalization and the state of economic asymmetries between developed and a developing country has created a unique and complex situation in the present business world. This research paper aims to carryout a detailed study of what are the fallouts of this situation and what business challenges and opportunities are created as a result. A survey of available literature was first carried out. Research papers written on the subject or in related areas by various writers such as, Gary Gereffi (Duke University), Timothy J. Sturgeon (Industrial Performance Center, MIT), Engardio, Bernstein, Kripalani, Kaplinsky, Humphrey, Prahalad, Hamel, Feenstra, Petrovic, McKendrick, Doner, and Haggard etc, were studied for this purpose.

This paper thereafter focussed on the different effects of globalization and economic asymmetries such as - global outsourcing and off-shoring and their impact on jobs in the diverse sectors, international trade rules and their effects on jobs, global supply bases and their effects global buyers and suppliers, role of global value chains in job creation and establishment of business linkages between developed and developing countries, impact of globalization on jobs in advanced and developing countries and last but not the least, the various challenges to be faced and opportunities created for countries involved in global trade. The scope of research is purely based on secondary data collected from the above stated resources.

History of Global Outsourcing and Off-shoring and the Present Scenario

The term "off shoring" is often associated with the term "outsourcing", but neither implies the other. Whereas outsourcing refers to relocation of jobs and processes to external providers, regardless of the provider's location, off shoring refers to relocation of jobs in any foreign country without distinguishing whether the provider is external or is affiliated with the firm. Outsourcing may therefore include job relocation both within and between countries, whereas off-shoring refers to international relocation (Gereffi and Kaplinsky, 2001).

In the modern era of business, the first wave of global outsourcing began in 1960s and 1970s with the exodus of production jobs in shoes, clothing, cheap electronics and toys. After that routine service work, like credit card receipt processing, airline reservation and writing of basic softw code, began to move offshore. Today computerization of work, the internet, and high-speed private data networks have allowed a wide range of "knowledge work" to become more outsourcable (Gary Gereffi and Timothy J. Sturgeon, 2004) Global outsourcing has many key features of contemporary globalization: it deals with international competitiveness in a way that underscores the growing interdependence of developed and developing countries, a major part of it centres around jobs, wages and skills in different part of the world. What may be focused on is how the chain of activities is organized across firms and country boundaries and wherein the chain value and employment is created. There are enormous political as well as economic stakes in how global outsourcing plays itself out in the coming years, particularly as well-endowed and strategically positioned economies increase their participation in global value chains. Countries like India, China, the Philippines, Mexico, Russia, parts of Eastern Europe and South Africa have a large number of educated people who speak western languages and can handle outsourced information technology work. India is particularly well positioned in this regard.

The geographic shift of industries is certainly not a new phenomenon. In the early twentieth century in the United States, many industries that were established in New England, such as textiles, apparel, footwear and furniture, began to move to the Southern part of US in search of abundant natural resources and cheaper labour. The same forces behind the impetus to shift production to low cost regions within the United States eventually led U.S. manufacturers to cross national borders to places like Mexico, Japan and Singapore and eventually to most of East Asia. Global outsourcing started gathering pace from 1980s onwards. This process combines two quite distinct phenomena:

Outsourcing and Off-shoring: Outsourcing is a standard aspect of all businesses, which frequently and continually need to make the decision to "make or buy" specific inputs and services (Williamson, 1985). While companies regularly decide whether they wish to produce goods and services "in house" or "buy" them from outside vendors, the trend in recent years has shifted in the direction of "buy".

Major manufacturers such as American auto makers - General Motors and Ford, have changed heir internal parts divisions into independent suppliers and many businesses have outsourced a wide range of services such as accounts receivable, insurance and logistics etc to specialized firms in industries dealing with such services.

Off-shoring refers to the decision to move the supply of goods and services from domestic to overseas location. These activities may be carried out in facilities owned wholly or in part by parent firm, by transnational suppliers or by local suppliers

Another major driver of industry relocation has been trade rules, which either tilted the balance for market access in favour of local production or reduced tariffs in outward processing trade (or production sharing) to the point where manufacturing offshore for home market became highly attractive. The search for capabilities also weighs heavily in the location decision of firms. As the capabilities of both global and local suppliers matured in the 1980s and 1990s, lead firms in United States, Europe and to some extent Japan, began to move more extensively toward an international contracting model that utilized the capabilities of suppliers, contractors and supply agents to implement their off-shoring strategies (Gereffi 1994; Dedrick and Kraemer, 1998). This trend leads us to the term "Offshore Outsourcing" or "Global Outsourcing". It further leads to the creation of global supply base, which means establishment of manufacturing infrastructure in a suitably situated and sufficiently developed foreign country which can become a major product and service supply base for the MNCs We take the case of China and India in this regard.

Expansion of the Global Supply Base in Asia

Today China has established an infrastructure and factory capability that makes it the world's most important global outsourcing platform for manufacturing. It has an unparalleled mix of economics of scale, industrial diversification and domestically funded infrastructure, supported by world's largest inflow of foreign direct investment (FDI). Together these make China's export oriented factories a critical link in global value chains. But China is not alone.

There are low cost, high-quality offshore manufacturing platforms in many parts of Asia as well as Mexico, South America, Eastern and Central Europe. These far flung locations are coming to be better integrated and more connected with one another on a daily basis, which is critical to the emergence of a global supply base. As a result one may note that between 1980 and 1998 Singapore doubled its share of manufactured products in its total exports, from 43% to 86%, Thailand tripled their share of manufacturing in its export total from 25% to 74%, Malaysia quadrupled its manufactured export ratio from 19% to 79% and Indonesia had the most dramatic gains, with manufactured export soaring from 2% to 45%. Mexico is the only non- Asia economy with a transformation of similar magnitude, its manufactured export grew from just 10% of total export to 85% by the end of 1990s (Dicken, 2003).

China's economic growth, averaging 8% a year since 1978, has not only made it into a global Zgoliath, but it has also become the major engine for intraregional trade in developing Asia. China has a large trade surplus with United States which is closely linked to its widening trade deficit with East and South East Asia (Gereffi, 1994; Dedrick and Kraemer, 1998; Dicken, 2003).

China has become the single largest export market for Japan and East Asian newly industrializing economies such as Hongkong, South Korea, Taiwan and Singapore and it accounts for nearly 80% of Japan's increase in export in 2003. China's demand for intermediate components from its East and Southeast Asian regional trading partners., which supplied it with over half of its total imports in 2003, has grown sharply, thereby resulting in a huge rise in China's exports of final goods to non Asian industrial economies. Participants in Asia's regional production chain have pushed each other to move from low value-added sectors to high value-added sectors in the past decade by "vertical specialization" in global value chains. Japan and newly industrializing economies, slated above, supply China with high technology and relatively high value-added inputs and finished products, and Southeast Asian economies (Indonesia, Malaysia, Philippines and Thailand) export significant quantities of primary products to China (Asian Development Bank, 2004).

Industrial development in China has been facilitated by liberal policies set in Beijing, as well as the huge investment in infrastructure by city and provincial governments competing to capture a greater share of FDI flowing into the country. It has also been driven by the investments of foreign firms from Europe, Japan and United States as well as investments by "companies especially those from Taiwan and Hongkong".

Offshore outsourcing in India's IT sector is considered as another globalization success story. In 2002 India's IT service providers were dominant offshore vendors developing an estimated $10 billion in IT services (Karamouzis, 2003). India employed about 650,000 professionals in IT services in 2003 and this figure has increased significantly during the next five years. The cost differentials make additional IT outsourcing in India highly probable. In United States, gross domestic product (GDP) per capita in 2003 was just over $35,000 and the average salary for a programmer is $70,000 per year. Where as in India, GDP per capita is $480 and average salary for a programmer is around $8000 per year. Thus an Indian programmer makes only one-ninth of his US counterpart, but in the domestic setting this Indian programmer is earning more than 16 times the minimum wage, while the average U.S. programmer earn only twice the minimum wage.

While IT outsourcing is a globalization success story for India, it has become a highly politicized issue in the United States. According to Vivek Paul, Vice

President of Wipro Technologies: "If three million jobs have been lost in the U.S. and 100,000 created in India, every one of those three million think of these jobs created in India as 'That is my job' (Waldman, 2004)". This leads us to the effects of globalization on jobs in diverse sectors.

Global Outsourcing and its Impact on Jobs in Diverse Sectors

The process of outsourcing and off-shoring leading to the formation of global value chains, have been very rapid and widespread. As a result studies of globalization in specific industries are largely aimed at describing the organizational and geographic changes that have occurred over the past 15 to 20 years. Very little work has been done to systematically estimate the impact of globalization on jobs in these industries. Where attempts have been made, the lack of coherent cross-national data in anything beyond trade and investment – especially employment and wages – has made the task extremely difficult. Even in countries where employment and wage data are easily available, isolating the effects of globalization from other forces of change has proved to be daunting and many scholars of specific industries lack the methodical skills and proclivity to make such estimates. For example in their 1999 study of globalization and job in motor vehicle industry for the Alfred P Sloan Foundation, Timothy Sturgeon and Richard Florida state: "the impact of globalization on jobs is difficult to tease apart from the effects of technological change, organizational structural change, and secular democratic shifts towards younger workers with more education".

In this context Dolan and Humphrey (2000), and Reardon and Berdegue (2002) have documented dramatic changes in the structure of global value chains in horticulture and food retailing, where supermarkets have imposed more stringent controls over their suppliers. Consolidation has increased at the levels of the firms, exporters, importers, and distributors. Developing country producers have been forced to meet developed country standards, not just for export, but also for local sales as supermarkets take commanding shares of retail food sales. While current research has not yet provided a systematic assessment of the impact of these changes on agricultural and food processing jobs, it seems obvious that the impact on small holders, who cannot possibly make the needed investments, is extremely negative because they are being excluded from the chain, not just for export but for local markets as well. Shifting employment dynamics in agriculture represent a critical research challenge, especially because a very large portion of workers in developing countries are still employed in agriculture.

Outsourcing: It's Impact on American Jobs Market

By: Kendra (2007)

In 2004 the democratic presidential candidate race was zeroed down to which candidate proves his protectionism in eyes of average Americans, who are worried about the increasing number of jobs loses due to outsourcing and off-shoring. To sum up the sentiments management thinker Tom Peters puts it in one of his presentation (Tom Peters, 2004) –"when I was young my mom used to tell me "finish your food, people in India and China are dying of hunger". Today I tell my daughter 'finish your homework, people in India and China are looking for your job".

Outsourcing and off shoring has become the latest rage in corporate America. Companies are resorting to outsourcing to cut costs and be competitive in the market. This focus on outsourcing has led to shipping out of thousands of American jobs to far fetched place like India and China.

Today, young peoples sitting in their offices in Bangalore and Dublin are answering average American's insurance queries, planning their taxes, helping them fixing their computers, providing information regarding their credit card accounts and helping them in planning their debts. The surge doesn't last there it has now started threatening the white collar jobs which was once considered Americas birth right. So what will be the future for American jobs market, will it be as doomed as the candidates in the presidential race made to believe us or we have to dig deeper to find the real truth.

What is Outsourcing and difference between Outsourcing and Off-shoring

Outsourcing and off-shoring are taken one for another but there is a fundamental difference between outsourcing and off-shoring. Outsourcing is defined as the exporting of non-core business operations or jobs from internal production within a business to an external entity which specializes in that specific operation. Decisions regarding outsourcing are often made to lower operational costs or to focus on business core competencies. Off shoring is when the company sets up its offices in foreign land to avail the resources, tax benefits or human capital. Unlike outsourcing, in off shoring operations and jobs are managed by the parent company rather than getting it done from external entity. A related new term is out -tasking: it is typically on an annual contract, or sometimes even a shorter one. It involves continued direct or indirect management role play in decision-making by the parent company of the out-tasking business.

Why do we Outsource

Outsourcing is not a new phenomenon; it is with us since time immemorial. Europeans started outsourcing sugar from Latin American countries by employing local people. In modern economies it has its root in theory of comparative advantages by traditional economist David Ricardo (Ricardo, 1817). As the theory propagates that one should spend one's energies on things in which it has comparative advantage. It will ensure maximum utilization of the resources. Similarly outsourcing enables the business to focus its energy on its core competencies and avail the benefits of others dexterity in operations, in which other companies have efficiency. These efficiencies could be process related like company A is better than Company B in making T-shirts, or they can be formulated like one government providing more tax holidays then another so the first country become preferred destinations even though the actual cost of getting a T-shirt made is comparatively higher than the second country. According to the McKinsey consulting analysis off-shoring creates net additional value for both outsourcing economy as well as in-sourcing economy, taking India as example it says that for every dollar off-shored, the U.S. economy accrues between $1.12 and $1.14 while the India captures just 33 cents. US economy benefits from combination of reduced costs (58 cents), purchase from US Suppliers (5 cents) and repatriated earnings (4 cents). In addition some 67 cents for directly retained benefits and 45-47 cents from re-deployment of labour in high end jobs.

International Trade Rules and Their effects on jobs

International trade rules have had an enormous influence on the creation and distribution of jobs in developing economies. One of the best example is the Multi-fibre Arrangement (MFA), which since the early 1970s until 1995 opened up the markets of the United States, Canada and most European countries to export, by a wide range of developing economies by placing quantitative limits (or quotas) on import for a variety of textile and apparel products. As a result of these quotas, the North American and European textile and apparel markets received imports from 50 to 60 developing economies (Gereffi and Mamodovic, 2003) In 1995 World Trade Organization (WTO) issued an agreement on Textile and clothing that mandated a 10 year phase out for all MFA quotas.

The MFA thus was to lapse from 1st January 2005. It was felt that it would adversely affect some developing economies whose major export earnings were through the export of textile and apparel items and it would brighten the export prospects and therefore job prospects in countries like China, since such countries are able to make quality products at a cheaper price through economics of scale by mass production process. Statistics however show that the export of Indian textile and apparel have not been much affected by the withdrawal of MFA, there was in fact a positive effect resulting in a 20% increase in its export as compared to the period when MFA was in force.

Global Supply base and its Effects on Global Buyers and Suppliers

A powerful trend in the most recent phase of global outsourcing in both manufacturing and in services sectors is the shift of activities to an increasingly competent set of suppliers, contract manufacturers and intermediaries – in other words, "deepening of outsourcing" facets of globalization. When work is "handed off" to independent suppliers, several things happen. First, the supplier can gain economics of scale and scope by pooling its resources across a broad customer base. Second the existence of highly competent independent suppliers lowers the barriers to globalization for firms, including small and medium size firms, which have not yet shifted its activities offshore. Third, the separation of routine and labour intensive functions from non routine skill intensive functions and passing the former to independent firms, eases the introduction of two- tier wage and benefit structure. The emergence of global supply base lowers the cost of barriers to globalization and so encourages more firms to adopt global outsourcing strategies. When smaller less competent firms move in this direction, markets are created for a broader array of functions to be outsourced and this drives suppliers to bundle additional functions and increase their range of competence. This bundling and packaging of functions by suppliers lowers the barriers further and a cycle of suppliers upgrading and increased out sourcing is set in motion. Sturgeon and Lee (2004) had referred to this process as "industry co-evolution". Clearly the role of lead firms in driving the process forward has been critical, especially when we consider the increased involvement of huge retailers like Wal-Mart and Costco in pushing their suppliers to lower costs and increase quality by consolidating production in low- wage locations such as China and India. The measurement of globalization's impact on service sector employment, as in manufacturing, is clearly a vexing issue. As Dossani and Kenny (2004) put it "How significant service off-shoring will be for developed country employment pattern is difficult to calculate".

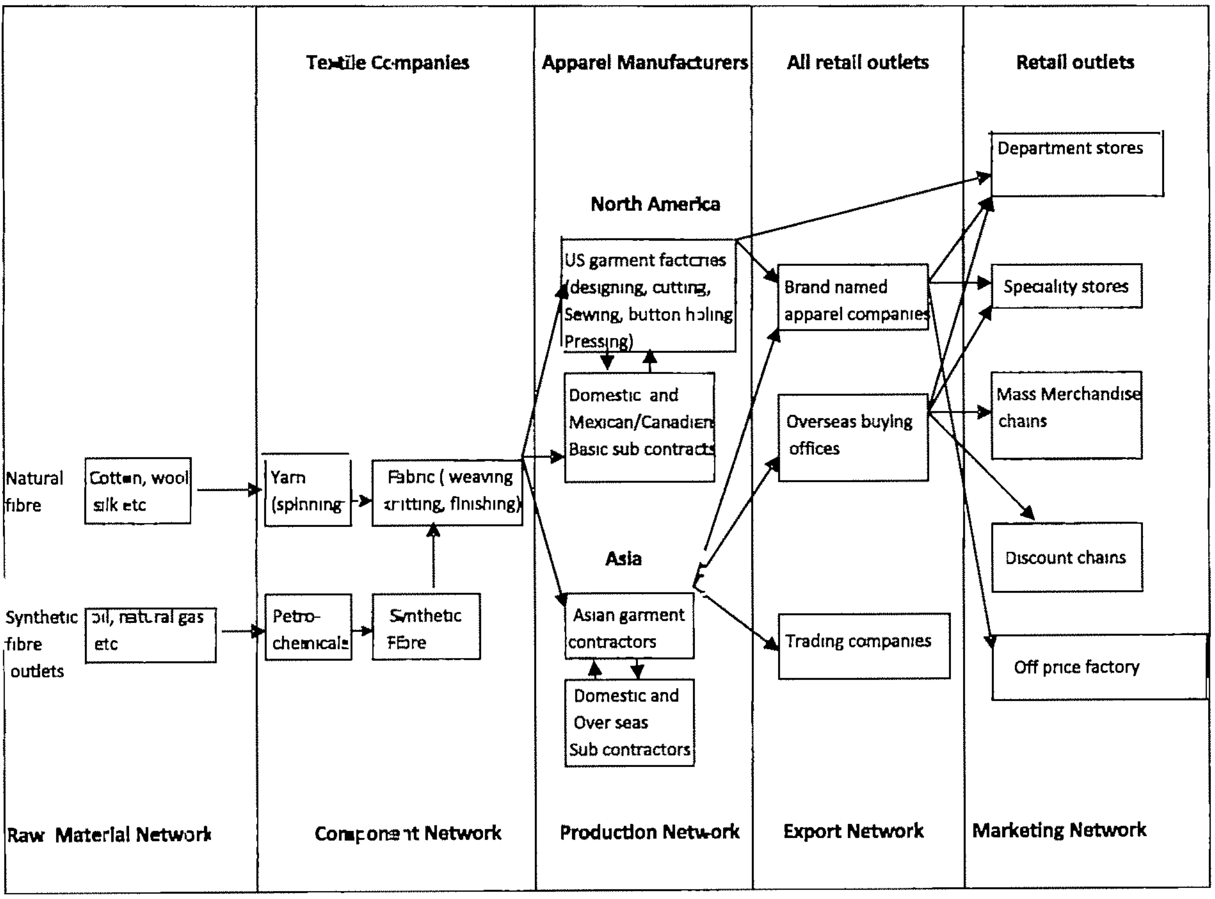
Like manufacturing, the globalization of services started with MNCs in fields like accounting and consulting, setting up offices in offshore locations to access new markets followed by the movement of centralized labour- intensive functions, often referred to in services as "back office" work (such as call centre and bill processing) to places with pools of educated low cost labour. At broader level, the fragmentation and de-location of value chains, exemplified by global outsourcing, has caused the interests of the companies and national economies in which they are based to diverge (Reich, 1991). The growing power of MNCs, is increasingly uncontested by workers and unregulated by governments, allowing the world's largest firms to "pursue profit with no regard for the wider social or environmental impact on their activities" (Blackwell, 1997).The emergence of broad and deep supply base has accelerated this divergence of interests because it makes it easier for firms from advanced economies, not just giant MNCs, but small and medium sized firms as well, to move their activities offshore. Offshore activities however, if successful, have the potential to add management and product development jobs at home generate cash that might be used for domestic investment and increase the domestic production of materials and parts bound for offshore final assembly plants. Cost cutting can also be a motivation to move activities off shore when operating cost differentials are great enough to offset transport and tariff costs. In terms of employment at home, the key difference between offshore investment that are market-seeking, on one hand, and those that are cost cutting or capability seeking on the other, is that goods and services produced offshore for local markets do not directly displace jobs at home unless they are under-cutting established or potential exports. When activities are moved offshore to cut costs or tap capabilities and market remains at home, domestic employment is almost certainly displaced.

Role of Global Value Chain

A value chain is a chain of activities for a firm operating in specific industry. The business unit is the appropriate level for construction of value chain. Products pass through all activities of the chain in order and at each activity the products gains some value. The chain of activities gives the product more added value than the sum of additional values of all activities. The cost of activity should not be mixed up with the concept of value chain. Diamond cutting can be used as an example of the difference. The cutting activity may have low cost, but the activity adds to much of the value to the end product, since a rough diamond is significantly less valuable than a cut diamond.

A global value chain analysis describes the full range of activities required to bring a product or Service from conception, through the intermediate phases of production, to delivery to consumers and final disposal after use (Kaplinsky, 2000).This implies that global value chain (GVC) is all about value creation and management. GVC analysis gives us better insight into what products countries import and export; what rewards accrue to whom; similarly, how and why lead firms go about setting up and maintaining production and trade networks. As an example: An apparel global value chain is shown below:-

The Apparel Global Value Chain


Textile Companies
Apparel Manufacturers
All retail outlets
Retail outlets
Department stores
North America
US garment factories (designing, cutting, Sewing, button holing Pressing)
Brand named apparel companies
Speciality stores
Domestic and Mexican/Canadian Basic sub contracts
Overseas buying offices
Mass Merchandise chains
Natural fibre
Cotton, wool silk etc
Yarn (spinning
Fabric (weaving knitting, finishing)
Asia
Discount chains
Synthetic fibre outlets
oil, natural gas etc
Petro-chemicals
Synthetic Fibre
Asian garment contractors
Trading companies
Off price factory
Domestic and Over seas Sub contractors
Raw Material Network
Component Network
Production Network
Export Network
Marketing Network

Source: Gereffi G and O Memedovic The Global Apparel Value Chain, UNIDO, Vienna – 2003

Impact of Globalization on Jobs in Advanced and Developing Countries

The complexity of the relationship between globalization and employment is daunting when we try to determine its impact for large number of industries and countries, and over the span of several decades. However, important methodological breakthrough have been made, economists who have carried out longitudinal and cross-sectional studies using high quality data sets that allow researchers to asses in a more rigorous manner the impact of global outsourcing on workers in developed countries between 1979 and 1999. The dramatic increase in U.S. import, for example, has led to what is called "trade related loss" in policy circles. Current population survey, Kletzer (2001), obtained samples of trade-displaced workers who lost jobs in U.S. industries facing increased import competition. Compared to workers who lost jobs in other sectors of U.S economy, the characteristics of trade-displaced workers in manufacturing include being slightly older, notably less educated, with longer job tenure, somewhat more likely to be minority, and far more likely to be production oriented (just less than one-half of manufacturing displaced are low skilled blue collar workers...) (Kletzer, 2004).

These characteristics of displaced workers in manufacturing do not correspond with the profile of workers who succeed in typical training, which limits their probability for re-employment. It is further found, workforce in the U.S. in the manufacturing sector fell from 26% to 14% between 1960 and 2000, while manufacturing output as a share of gross domestic product diminished from 27% to 16% (Bernard, Jensen and Scott, 2004).

Increased exposure to low-wage country imports is shown to be negatively associated with plant employment, output growth and probability of plant survival across industries in U.S. Within industries, capital-intensive plants do better than labour-intensive ones in terms of their likelihood to withstand import competition and growth.

Major international trends in the production and trade of manufacturers indicate substantial progress by developing economies. Developing economies have doubled their share of manufacturing value added between 1975 and 2000, with close to 25% of global value added in the latter years and at a sectoral level, there is a clear shift in the developing world away from raw material and resource based manufacturers to at least low-tech manufactured exports (Kaplinsky, 2004).

Developing countries appear to be narrowing the gap with advanced industrial economies in terms selected indicators of manufacturing competencies. Between 1990 and 2000, the share of developing economies in world manufactured exports increased from 16.6% to 26.8%. While the share of industrialized economies decreased from 80.3% to 69.2%. Figures on the technological structure of manufactured export show that the "high tech" portion of total manufactured exports for developing economies nearly doubled from 17.4% to 33.7% between 1990 and 2000, while the increase for industrialized countries during this decade was more modest from 23.2% to 41.7%. Nearly 42% of East Asia's manufactured export is in the high tech category and almost one third of Mexico's export also fall in this category (UNIDO). All the above stated development taking place are having a positive impact on the employment state in the developing countries.

Challenges Faced and Opportunities created as a result of Globalization and Economic Asymmetries

Challenges faced

The era of globalization also brings about a closer degree of financial and economic integration between countries in an environment where shocks have become more global in nature and where a crisis in one country can easily affect others. This presents special challenges in the conduct of fiscal and monetary policies, particularly in the conditions of heightened uncertainty (Gereffi and Kaplinsky, 2001)

Globalization and Economic Asymmetries between different region in the world (primarily divided and named as Developed and Developing economies) has also created a very complex situation. As far as job situations are concerned, it has become rather difficult to state clearly the cause or causes of a particular job scenario in developed or developing economies, as there are many inter-related factors responsible for it. MNCs look for producing quality products or service in a cheaper way. They therefore resort to off-shoring and outsourcing their product or service to developing countries where labour costs are low but at the same time the skill quality is as good as of those in advanced countries and this enables them to gain competitive advantage. As a result jobs are moving from developed countries to developing countries, a condition which politically is unacceptable to many in the developed countries. The challenge now is how to balance the situation in a manner that needs and expectations of MNCs, developed and developing economies are met to their satisfaction. Global asymmetry in economies between developed and developing countries is the next factor to be considered. The overall challenge to economic globalization is to make the global system deliver economic growth, more consistently and more equitably, as that is the best way to further reduce global poverty and inequality. The specific challenges to globalization are both region and country specific. Global growth is determined mainly by the performance of the industrial countries. Economic recession and downturn are now a periodic occurrence which brings down the rate of growth of all the affected countries. Globalization has linked the economies of most countries in the world in a manner that recession in a major country, affect the economic condition of many other countries to a greater or lesser extent. It can be called a "ripple effect". How to dilute or remove such ripple effect or how to prevent spread of recession or for that matter, recession in any country is again a challenge for both economists and the political government of a country.

Ensuring a sustainable growth is another challenge for the developed and developing countries. In Asia where South Korea has already led the way, China and India are well launched on the path to Sustainable growth, and it is reasonable to expect growth to continue to spread throughout the region – though one should not forget that some countries in Asia are among the world's poorest.

Nor should we forget that large section of Indian population (34.7%) are living below the poverty line. In fact in many countries including India, the gap between the rich and the poor is increasing and this situation appears to be accelerating as a result of globalization. How to reverse this trend is again a challenge to be faced and met by the policy makers of the countries where such situations exist. Will greater emphasis on social justice, implementing them through health and education and spending on the poor, be able to arrest the gap between rich and the poor, caused by globalisation?

It is again a challenging question. As far as international trade is concerned, globalization is aimed at opening out the trade between different countries of the world, which would result in greater global prosperity. But this is not happening, each country takes care of its own interest first. As a result lowering of trade barriers are slow and often subjective, due to which the complete benefits of globalization and trade liberalization is not achieved. As countries are sovereign, no action other than sanctions can be imposed on them by World Trade Organization (WTO). Which may or may not be accepted by other countries friendly to the concerned country? Inability of the WTO and other such bodies to ensure that barrier free entry of goods and services from one country to another is a very challenging situation. Some points to note on this matter are:-

(a) Lack of complete access to product markets caused by both trade barriers and hefty subsidies in developed countries on commodities of interest to agricultural producers

(b) Limited access to financial resources and for some countries high conditionality attached to concessional resources;

(c) The constraints on acquiring technology in terms of resources both human and financial and inadequate infrastructure. Acquiring new technology by developing countries from developed countries is problematic as developed countries tend to sell only their obsolete technology to the developing countries.

Within a country, there is the challenge of forging liberalization policies that promote greater integration of domestic economy with the global economy. There are pressures from trade unions, lobby groups and local businesses over the effect of these policies on jobs and closure of local industries. These can make it politically and socially difficult to implement reforms that could benefit a country in the medium and long term. The use of national ownership of an adjustment programme thus presents a challenge in its practical application. The responsibility for achieving the right balance and pace of adjustment lie with individual government, but in practice this is not simple as it appears.

Building a powerful set of domestic institutions that can meet the rising demands in race to be and remain competitive, brings its own challenges. What determinants of competitiveness should a country focus on? The standard determinants of competitiveness should are not only economic and technological but should also include non-economic factors such as incorporation of social justice and protection of human rights etc.

Aligning with Opportunities

Each country based on its individual endowments and circumstances will have to design and implement national policies in a range of areas that will ensure that the country takes advantage of the opportunities that globalization and economic asymmetries provide and at the same time deals with risks that these introduce.

In terms of national economy, as Stiglitz points out, there are 3 distinct advantages:

(a) The demand for a country's product is no longer constrained by its own markets.

(b) A country's investment is no longer constrained by what it can save by itself.

(c) A country's producers can have access (at a price) to most advanced technology.

Globalization is an unstoppable phenomenon, presenting opportunities to those who are prepared and threats of failure to those who are not. To achieve benefits, there has to be first, political will and good leadership. Secondly, a national consensus needs to be forged among stakeholders concerning the necessary reforms and, thirdly, appropriate institutions and policies must be put in place to meet the challenges. The rules of the game may be perceived to be unfair by some, but there are few alternatives to well designed country policies and programmes to manage in the scenario of globalization and economic asymmetries.

It is not easy for countries to manage globalization for their own benefit. Regional cooperation through which countries look beyond their borders to tap and leverage other's strengths could be an effective approach in this endeavour.

A growing innovation in the world economy is the establishment of international standards and codes as the "rules of the game" for all economies. Now there are codes of good practice in monetary policy, fiscal transparency, insurance and payment systems, securities, corporate governance, accounting, statistics and bank supervision, as well as growing array of standards in other fields. This means that there is a greater security of policies of individual countries by market participants and the policy makers have the additional burden of "selling" their policies to the world at large through greater transparency. The performance of economies, industries and firms is continuously compared and benchmarked across nations. This requires the harmonization of systems with internationally agreed codes and at the same time creates pressures of speedy reforms.

Conclusion

The complexity of relationship between globalization and economic asymmetries is daunting when we try to determine its impact on different countries over the span of many years. There is no doubt that outsourcing and off-shoring are playing a major role in shifting of jobs from one geographic region to another. Today computerization of work, the internet and high speed private data network has allowed a wide range of 'knowledge work' to become more outsourcable. Global outsourcing has not only caused greater competition, it has also resulted in growing interdependence among the developed and developing countries, in terms of investments, labour costs, skill availability, etc. Many major manufacturers are shifting their production bases to developing countries due to various reasons, the important ones being availability of cheap labour, abundance of natural resources and huge market potential. Global outsourcing and offshore outsourcing has led to the creation of global supply bases in countries like China, Southeast Asia, Mexico, South America as well as in countries in Eastern and Central Europe. Global supply bases also result in creation of global value chains wherein many different companies in different countries join together to perform a series of operations/activities that result in value addition to the product/service are being produced by them. All these activities and operations are resulting in a substantial economic development and progress in the developing countries and as a result the gap between them and the advanced countries seem to be narrowing. In fact it has been seen that countries who have been able to foresee the opportunities being created and prepared themselves to avail them, have been able to win maximum benefit from globalization.

Globalization has resulted in integration of market economies of countries all over the world, which may be beneficial when goings are good but in case of an economic down turn/ recession in one major county, it may have a "ripple effect" of an adverse impact on the economies of the other countries as well.

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Book Reviews

Atanu Ghosh (2010)
Strategies for Growth: Help Your Business Move Up the Ladder,
Random House India, Noida
Xvi+193pp
Price: Rs. 299, Soft.

Managers do have a tough time because they have to extract resources from the owners and extract work from the workers. The owners usually have three types of responses: (i) no; (ii) it is not possible; (iii) instead of one lakh, right now, only fifty thousand can be sanctioned. The workers often complain that they have been given a raise of only five percent but the work being demanded is actually worth a twenty percent raise. The shareholders want higher and higher rate of dividends. The owners are wanting more and more growth in businesses, increased returns and the workers are wanting more and more increments in their salary and more and more amenities.

All organizations, whether family owned, or government owned, big or small, manufacturing based or service based, invariably seek to follow a trajectory of unhindered growth. Many factors may make a business successful or unsuccessful. Several companies have tried to stretch their brands beyond their normal product ranges and ended up unsuccessful. This book seeks to demystify the different growth strategies and the challenges companies face in their quest for growth. The book can be specially helpful to management practitioners as it contains take-aways for all managers to imbibe for success. Nonetheless, the reader should use his/her wisdom judiciously in order to develop a sustainable model for making organizations perform and last, as "one size fits all" does not always hold true.

The book consists of twelve chapters, each of which is thoroughly absorbing. The first eight chapters focus on the traditional tools of growth used by organizations. The next four chapters focus on non-conventional growth strategies. The first chapter explains the concept of growth through market penetration which involves the least risk and the use of minimal resources. Market penetration implies growth in existing markets using existing products. The chapter explains the use of tools such as Market Opportunity Index and the Sustainable Competitive Advantage Index. Put together, these tools help in strengths, weaknesses, opportunities and threats (SWOT) analysis. The chapter also covers the concept of niche and mass marketing. The chapter has eye-opening examples of Aircel, Tata Docomo, ITC, Nirma, Maggi, Leisure Hotels Limited, and a few others.

The second chapter is devoted to market development strategies which help in growing beyond existing markets including transnational expansion. The various entry mode options such as exporting (indirect exporting and direct exporting), licensing (franchising, contract manufacturing, management contracts), joint ventures, strategic alliances, and wholly owned subsidiary have been discussed in a comprehensive manner. The role of risks, investments, complementary resources and capabilities has been examined in great detail. The chapter has brilliant illustrations which help understanding Kellog's, Nike's, and Bridgestone's entry into India.

The third chapter is dedicated towards developing an understanding of how organizations can grow by expanding their market presence through their products or services. The chapter has splendid illustrations from the Tata Nano project and Bharat Forge Limited which bring out the meaning of terms like 'arena' and 'staging'. The fourth chapter dissects the value chain and brings out its constituents. The chapter then advances into vertical linkages and vertical integration. All the types of vertical integration (backward vertical integration, forward vertical integration, balanced vertical integration) along with their advantages and disadvantages have been explained in great detail. Several facets of vertical integration have been explored through the examples of Reliance Industries, Bowmar Calculators, and De Beers. The fifth chapter explores concepts such as disruptive innovation and sustaining innovation. The case studies of Apple iPod/iTunes, Nintendo's Wii and Tata Nano succinctly explain how growth can be achieved through disruptive innovation. The sixth chapter helps in understanding the concepts of diversification as a growth tool, and emerging markets. The author has provided a checklist for ensuring success through diversification and drawn illustrations from the Tata group, Microsoft and Videocon to exemplify how diversified organizations have succeeded in an emerging economy.

The seventh chapter explores the options of achieving growth by building strategic alliances. This chapter is especially warranted as indeed it may not always be a wise decision for an organization to foray into every area of interest. The chapter covers six types of strategic alliances. These alliances have been explained through the illustrations of Bharti Airtel's partnership with Ericsson; GE Money Bank, Migros, and MasterCard who came up with the M-Budget Credit Card; and ICICI – Prudential Life Insurance Company. The eighth chapter explains the concepts of mergers (horizontal merger, vertical merger, conglomerate merger), and acquisitions (friendly acquisition, hostile takeover). The chapter offers splendid illustrations of the PepsiCo's acquisition of Quaker Oats and the HP – Compaq merger. The ninth chapter is devoted to Turnaround Management. The chapter has case studies of Scooters India Limited, Ballarpur Industries Limited and McDonald's. These compelling case studies explain the different drivers of organizational turnaround, internal and external aspects leading to the sickness of a firm, and how plummeting profits were steered to a position of increased profit-earning on a year-on-year basis. The tenth chapter discusses the internal factors in an organization – such as complacency, the tendency to feel that the value proposition created by an organization has been well accepted over a substantial period of time when in fact the value proposition may require minor or massive changes, poor customer expectations management, static nature of organizational capabilities, leadership styles requiring changes, capital crunch – which might possibly create hurdles in organizational growth. The chapter has splendid flashes from the SEWA Trade Facilitation Centre, Enron and General Electric that bring out the factors which might trammel organizational growth.

Through the cases of the Royal Orchid Hotel, Naukri.com, and MakeMyTrip.com, the eleventh chapter explains the key concept of entrepreneurship, the challenges faced in entrepreneurial ventures, and the methods of raising capital for small and medium enterprises. The chapter also delves into the traits of a family business. The twelfth chapter explains through the illustrations of the State Bank of India, Southwest Airlines, and Hewlett-Packard how innovation and sagacious business analysis can be combined to manage an organization specially in tumultuous and turbulent times.

The book could have been more helpful if it could also have examined how political (for instance ENRON in Maharashtra, KFC in Karnataka) and legal environment along with trade and tariff barriers can effect businesses. In the present scenario terms like Blue ocean strategy and Red ocean strategy are also being used. Red oceans are all the industries in existence today while blue oceans denote all the industries not in existence today implying that in blue oceans, the demand is created rather than fought for. Perhaps a chapter could have been devoted to red ocean and blue ocean strategy and the book could have focussed on a wider global context. Also agriculture has played a key role in the development of human civilization, so a little more emphasis could be laid on the agricultural sector. A chapter could also have been devoted exclusively to companies which have been involved in scams and scandals and are trying to earn money by fooling the easily gullible consumers.

This book is an outcome of the efforts of Indian Institute of Management, Ahmedabad (IIMA). IIMA is the first IIM in our country to launch its own business book series in association with Random House India. The book under review is written by an IIMA faculty. The examples given in the book are meticulous, comprehensive, instructive and can be very helpful especially in classes related to Marketing Management and Consumer Behaviour. The author has explained business jargon such as 'born globals', organic growth, inorganic growth, Porter's five forces framework, BCG matrix, contractual arrangements, equity arrangements in a very concise and effective manner Some of the concepts have been explained through meaningful diagrams which coupled with the author's easy story-telling style make the book relishing, compelling, and absorbing. This superlative tome is indeed a collector's item.

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This book has been written keeping in view services sector constituting a large part of the Indian economy both in terms of employment potential and its contribution to national income. It is today the largest and fastest growing sector globally contributing more to the global output and employing more people than any other sector. According to the CII 2010 survey, Indian Telecom and Mutual Fund industry have emerged as the biggest contributors in the growth of services industry; both recording excellent growth rates.

Services marketing are a comprehensive marketing textbook on the subject in the Indian context. It brings to attention the importance of marketing in services and the various challenges faced by the managers of service organizations. The book focuses on management of service business and strategy development. It is useful to students of management and commerce and undergraduate and post-graduate levels, service business executives and those connected directly and indirectly to the service business.

The book provides a comprehensive review and analysis of services marketing issues, practice, and strategy. It comprises 24 chapters in all with seven new chapters. A brief overview of chapters is given below:

Chapter 1 enables the learners to understand the concept of services marketing, specific characteristics of services, reasons for growth in the services sector and identifying career opportunities. Chapters 2 and 3 review the core concepts and philosophies marketing and an overview of marketing environment in which firm operates. Chapter 4 describes the status of the services sector in India, reasons for growth and of services and identifying key services in India.

Chapters 5 and 6 focuses on importance of consumer behavior, factors influencing consumer expectations and perceptions, consumer purchase decision process, distinctive behavior pattern of consumers in services as well as marketing information system and research. Chapter 7 explains the importance and process of strategic planning in services, identifies the strategies suitable for service organizations as well as the components of the services marketing mix.

Chapter 8-15 explore the strategic issues related to market segmentation, understanding customization strategy, competition analysis and strategies, identifying threats of competition, understanding the industry and market concepts of competition; service demand situations and patterns, variations in the demand for services, strategy formulation for demand management, describing strategies to manage waiting lines; understanding the concept of service product, service blueprinting, service product mix and service differentiation, process of development of a basic service package as well as new service development and service life-cycle management; service branding and positioning, brand equity and positioning strategies; physical evidence strategy, services cape, its dimensions and effects on behavior; understanding distinctions between goods and services pricing, and value-based pricing strategies; describing distribution flows, challenges, intermediaries for services as well as strategies for channel management.

Chapters 16-18 focuses on importance and success strategies for internal and external marketing, role of employees in a service organization; design of integrated marketing communications, identifying the decision areas in designing communication campaign, understanding the impact of word-of-mouth communication; and understanding the dimensions of interactive marketing, determinants of employee and customer behavior as service encounter, understanding moments of truth and its management and identifying the measures to enhance employee and customer participation.

Chapter 19-21 focus on service quality management by understanding the way consumers perceive service quality, identifying the determinants and managerial process for service quality and understanding service quality audit; service failures and recovery by understanding the reasons for customer grievances, customer response to service failures, complaining behavior of customers and service recovery strategies; understanding the importance, drivers, managerial framework and application of customer relationship management.

Chapter 22 helps in understanding the international marketing environment, programme, importance, trade barriers and market entry strategies. Chapter 23 helps in understanding business response to consumerism, consumer expectations as well as concerns, consumer movement in India, salient features of the Consumer Protection Act, 1986. Chapter 24 helps in understanding the marketing of services in India viz. banking services, passenger transport services, tourism services, education services and hospitality services Chapter 24 is followed by five short case studies.

The book includes several features designed to help students comprehend the concepts presented in the chapter. Each chapter includes learning objectives that outline chapter goals. The opening vignette presents a real-world situation within the scope of the chapter content. Each vignette ends with a set of discussion questions, the answers to which may be found within each chapter. These vignettes have been included to illustrate the application of concepts to solve real-world problems.

Each chapter includes two short caselets illustrating the real-life application and implementation of concepts discussed within the chapter. Key concepts and definitions from each page are presented as margin notes to help the student grasp and retain the concept and its context. Two services marketing insight boxes have been included in each chapter. These boxes provide additional input to readers on the practical developments in the subject being discussed in the chapter. A detailed summary recapitulating the salient points discussed in the chapter is included for a quick review. A complete list of key terms is provided at the end of the chapter for easy reference. Each chapter includes a few short-answer questions at the end for students to test their understanding of the key concepts discussed in the chapter. Each chapter also includes essay questions designed to test the student's ability to analyse concepts and apply them to real-life situations. Two assignments have been included at the end of each chapter to help readers apply the concepts to practical, real-world problems and data sets to foster experiential learning. The teaching and learning package comprising Power Point slides and instructor's manual, in addition to the text, is provided for the instructors.

For a scholar on services marketing, this book may pass on as another basic textbook since the author has not tried to develop or propose any original model or concept. It is not based on what really works in professional services. It is not for sole practitioners and small consulting firms and larger firms. Moreover, It would be better to reorganize all the chapters in various parts, each comprising chapters relevant to each other.

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